

Opencut #: **3170****OPENCUT MINING PERMIT**Amendment #: **0**

Pursuant to the Opencut Mining Act (MCA Title 82, chapter 4, part 4), the State of Montana, Department of Environmental Quality (DEQ) is authorized to issue Opencut Mining Permits when, on the basis of the information set forth in the application and an evaluation of the proposed opencut operations, it finds the requirements of the Act and its implementing rules (ARM Title 17, chapter 24, subchapter 2) can be carried out and will be observed. The Act further authorizes DEQ to issue permit amendments in accordance with Sections 82-4-422[1], 82-4-432[11], 82-4-434[5], 82-4-436, and 82-4-439[2], MCA.

DEQ issues this **permit** to **PA Prospect Corp** (Operator). The permit comprises a total of **135.0 acres** located in **Missoula County**, Montana, to be known as the **Clark Fork Pit site**.

The following provisions apply to this permit:

1. DEQ approves the Operator's **permit** application and incorporates **it** into the permit for all purposes. The Operator is hereby authorized to conduct Opencut operations in compliance with requirements of the permit, Act, and rules.
2. If the Operator violates the permit, Act, or rules DEQ can take enforcement action which may include the assessment of penalties as specified in 82-4-441 MCA.
3. The permit does not relieve the Operator's obligation to: *a)* comply with any other applicable federal, state, county, or local statutes, regulations, or ordinances, and *b)* obtain any other permits, licenses, approvals, etc. required for any part of the operation.
4. The Operator may allow another party to conduct Opencut operations only if the Operator: *a)* retains control over that party's activities and *b)* ensures there are no violations of the permit, Act, and rules. The Operator is accountable for violations at the permit site, even if the violations result from the activities of another person.
5. The Operator shall pay the annual fee on the total amount of materials mined at the site, including materials mined by other parties. The Operator's annual progress report shall indicate the total amount of materials mined.
6. DEQ can only enforce requirements of the permit, Act, and rules. Therefore, Operator arrangements with another party (including the Landowner) should be stated in a separate written agreement between the two parties.
7. The Operator shall conduct reclamation: *a)* in accordance with the approved plan of operation; *b)* as concurrent with operations as feasible; and *c)* within one year of termination of the right to conduct operations, or the cessation of operations. If reclamation is not completed in the approved timeframe, after 30 days written notice DEQ may order the Operator to cease operations. If operations do not cease, DEQ may issue an order to reclaim, institute action to enjoin further operations, and sue for damages.
8. Unless the Operator is a governmental entity, a bond has been posted to ensure the site is reclaimed. If the site is not reclaimed as and when required, DEQ may pursue forfeiture of the bond. If the bond is cancelled or invalidated, the Operator shall provide a valid bond within 30 days. If not provided, DEQ may suspend the permit and require the Operator to cease operations.
9. The Operator may apply to amend the permit at any time. If approved, the amendment becomes part of the original permit for all purposes. DEQ is authorized to review the permit and require revisions as specified in 82-4-435 MCA.
10. The Operator shall allow DEQ and its representatives to access the site at any time to determine if Opencut operations are being carried out in compliance with the permit, Act, and rules.
11. The permit is for **135.0 acres** and the reclamation bond is for **15.0 acres**. The Operator must provide revised information and an updated bond approved by DEQ before commencing Opencut operations on any part of the **120.0 acres** of "Non-Bonded" area included in the permit.
12. This permit is effective upon approval below by DEQ and expires December **2031**.

APPROVED BY: STATE OF MONTANA, DEPARTMENT OF ENVIRONMENTAL QUALITY



Mining Bureau

Opencut Mining Unit Coordinator

Title

July 28, 2021

Date

SPILL MANAGEMENT AND REPORTING POLICY

I. CONTAINMENT AND CLEANUP

All releases or spills of hazardous or deleterious substances or other wastes, regardless of size, must be properly and expeditiously managed, contained, and removed to protect public health and the environment. This policy is written to provide guidance on when and how to report spills. This policy is intended to assist in the implementation of the following Montana laws and the administrative rules adopted thereunder: Comprehensive Environmental Cleanup and Responsibility Act (§75-10-701, *et seq.*, MCA); Hazardous Waste Act (§75-10-401, *et seq.*, MCA); Solid Waste Management Act (§75-10-201, *et seq.*, MCA); Underground Storage Tank Act (§75-11-501, *et seq.*, MCA); and the Water Quality Act (§75-5-101, *et seq.*, MCA).

II. NOTIFICATION REQUIREMENTS

Petroleum releases from regulated aboveground storage tanks (AST), underground storage tanks (UST) or petroleum storage tanks (PST) must be reported to DEQ within 24 hours of being detected as required by ARM 17.56, Subchapter 5. DEQ must be notified of releases of greater than 25 gallons of petroleum from an AST, UST or PST. Petroleum releases less than 25 gallons in volume must be contained and cleaned up within 24 hours. If cleanup cannot be completed within 24 hours, owners and operators must report the release to DEQ. DEQ maintains a leak line for reporting releases from an AST, UST or PST at 800-457-0568. Outside normal business hours, releases must be reported to the DES Duty Officer 24-hour phone number at (406) 324-4777. Releases must be reported to a live person - voice mails are not adequate notification.

All other releases and spills should be reported immediately to the state's Disaster and Emergency Services (DES) Duty Officer 24-hour phone number: (406) 324-4777. In addition to the following reporting requirements, notification(s) may be required by permits issued by state, federal or local government agencies. **Notification to the National Response Center (NRC) may also be required. NRC can be reached at 800-424-8802. DES or DEQ are not responsible for notifying the NRC.**

A. The following types of spills **must** be reported:

- Releases or spills of hazardous substances in amounts that meet or exceed the reportable quantities in *40 CFR Part 302*.
- Spills, overfills, and suspected releases from underground storage tanks and petroleum storage tanks. *ARM 17.56.501, et seq.*
- Releases or spills of any materials that would lower the quality of groundwater below water quality standards. *ARM 17.30.1045.*

B. The following types of spills **should** be reported:

- Spills that enter or may enter state water or a drainage that leads directly to surface water;
- Spills that cause sludge or emulsion beneath the surface of the water, stream banks or shorelines;
- Spills that cause a film, "sheen," or change the color of the water, stream banks or shorelines; or
- Spills of twenty-five (25) gallons or more of any petroleum product such as: crude oil, gasoline, diesel fuel, aviation fuel, asphalt, road oil, kerosene, fuel oil; produced water, injection water, salt water or combination thereof; and derivatives of mineral, animal, or vegetable oils.

For additional information:

Montana Department of Environmental Quality
Enforcement Division
Phone (406) 444-0379 Fax (406) 444-1923

For Office Use Only

Payor PA PROSPET LLC RENTAL Payment No. 2229 Payment Amt \$ 1,500.00 Date 04/06/2020**OPENCUT MINING PLAN OF OPERATION AND APPLICATION**Operator Name: **PA Prospect Corp.**Site Name: **Clark Fork Pit****INSTRUCTIONS** - How to submit a complete and accurate Plan & Application:

- Before completing this form, **verify you are using the most recent version** and read the help information available on the Opencut Mining Section's website at <http://deq.mt.gov/Mining/opencut>.
- Fill in all blanks and provide a detailed answer for each question. Write "None" if that is the correct answer.
- This form includes automated calculations that require Microsoft Word 2010 or newer. As data is entered into this form, auto calculate fields will auto populate (tab out of each field to ensure they auto calculate). Autocalculate fields contain **red** text. If an autocalculate field is blank, either: a) the required information was not entered, or b) the blank field does not pertain to your application.
- Opencut Mining Permits are "living" documents, meaning that whenever a permit is amended, the updated information replaces the outdated information. As a result, this form must be filled in completely for a **Permit** or an **Amendment**.
- The Department of Environmental Quality (DEQ) strongly recommends completing this application form in electronic format. Doing so will make applying for a future amendment much easier. Operators should keep the original electronic files and backup copies.
- Operator is required to submit all **Required Support Documents**, unless the exception box is appropriately checked. If the **Existing Approved Form Attached** box is checked, the Operator is required to submit a copy of the previously approved form with the amendment application. If permitted after 2010, the previously approved documents can be found on the Opencut website at <http://deq.mt.gov/Mining/opencut> (click on the "Search Opencut Permits" tab).
- Ensure all additional support documents submitted have the same name or title shown in the "Support Documents" section. Include a Cover Letter with the application materials that lists the names of all "Other" support documents submitted.
- Sign and date the certification in Section G.
- Submit all required application materials to the Opencut Mining Section in Helena as one package.

ID	Required	SUPPORT DOCUMENTS
		REQUIRED SUPPORT DOCUMENTS
a	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> \$1,500 Non-Refundable Fee for a Permit application or for an Amendment application if the application date is >10 years from the date of the last permit/amendment approval; or <input type="checkbox"/> \$750 Non-Refundable Fee for an Amendment application if the application date is < 10-years from the date of the last permit/amendment approval. Make checks payable to Montana Department of Environmental Quality <input type="checkbox"/> This application was submitted electronically and the check is in the mail.
b	<input type="checkbox"/>	Consultation with DNRC on Sage Grouse <i>Exception:</i> <input checked="" type="checkbox"/> Opencut site not located in Core, General Habitat, or Interconnectivity Sage Grouse Areas: https://sagegrouse.mt.gov <i>Exception:</i> <input type="checkbox"/> Amendment is not changing the existing permit boundary; therefore, no new sage grouse consultation is needed.
c	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> SHPO Consultation (no Class III required) or <input type="checkbox"/> SHPO Concurrence Attached
d	<input checked="" type="checkbox"/>	Well Logs <i>Exception:</i> <input type="checkbox"/> No Wells within 1,000 feet of permit area
e	<input checked="" type="checkbox"/>	Soil Photos <i>Exception:</i> <input type="checkbox"/> Amendment with no new acreage being added.
f	<input checked="" type="checkbox"/>	Site Map
g	<input checked="" type="checkbox"/>	Area Map
h	<input checked="" type="checkbox"/>	Reclamation Map
i	<input checked="" type="checkbox"/>	Location Map
j	<input checked="" type="checkbox"/>	Boundary Coordinate Table <i>Exception:</i> <input type="checkbox"/> Amendment is not changing the existing permitted boundaries.
k	<input checked="" type="checkbox"/>	Weed Board Notification of Opencut Operation
l	<input checked="" type="checkbox"/>	Reclamation Bond Spreadsheet <i>Exception:</i> <input type="checkbox"/> Government Operator
m	<input checked="" type="checkbox"/>	Landowner Consultation (ARM 17.24.206) Existing approved forms are acceptable for an Amendment not adding acreage, an asphalt or concrete plant, not changing the postmining land use, and not extending the reclamation date.

n	<input checked="" type="checkbox"/>	Zoning Compliance (ARM 17.24.223) Existing approved forms are acceptable for an Amendment not adding acreage, not changing the postmining land use, and not adding an asphalt or concrete plant. <u>Exception:</u> <input type="checkbox"/> Not required for applications mining bentonite, clay, scoria, peat, or soil only.
o	<input checked="" type="checkbox"/>	Surface Landowners List (MCA 82-4-432(2)(e) & (6)(b)) <u>Exception:</u> <input type="checkbox"/> Not required for amendment adding less than 50% of the permitted acreage.
p	<input checked="" type="checkbox"/>	Fuel Guideline for Spill Prevention & Management Worksheet <u>Exception:</u> <input type="checkbox"/> Not required if no on-site fuel storage and/or no mobile fueling on-site.
q	<input checked="" type="checkbox"/>	Determining Depth to Groundwater Worksheet <u>Exception:</u> <input type="checkbox"/> Amendment not adding acreage or increasing mine depth <u>Exception:</u> <input type="checkbox"/> Not required if no water feature would remain for final reclamation and there is no chance of a public meeting (Opencut reserves the right to require this form if water could be encountered, or if Opencut disagrees with the high and low water table levels identified in Section C1 of this application).
r	<input checked="" type="checkbox"/>	Bond (MCA 82-4-433) (Original Paper Bond must be Received by Opencut before permit can be issued.) <u>Exception:</u> <input type="checkbox"/> Government Operator <u>Exception:</u> <input type="checkbox"/> The submitted Reclamation Bond Spreadsheet does not require a higher bond.
ADDITIONAL SUPPORT DOCUMENTS (as required)		
	Included	
s	<input checked="" type="checkbox"/>	Additional Well Data
t	<input type="checkbox"/>	Dewatering Data and Analysis
u	<input checked="" type="checkbox"/>	Easement/Setback Documentation
v	<input checked="" type="checkbox"/>	Groundwater Monitoring Plan
w	<input type="checkbox"/>	Pond/Wetland Cross-Sections and/or Contour Map
x	<input type="checkbox"/>	Pond & Wetland Design Worksheet
y	<input checked="" type="checkbox"/>	Seed Mix Guideline
z	<input type="checkbox"/>	Slope Stability Analysis
aa	<input type="checkbox"/>	Stream/Waterway Worksheet
bb	<input type="checkbox"/>	Wash Plant Settling Pond Guideline
cc	<input checked="" type="checkbox"/>	Water Resources Assessment/Hydrogeologic Assessment
dd	<input checked="" type="checkbox"/>	Other: EPA correspondence for well offsets
ee	<input checked="" type="checkbox"/>	Other: Spill Prevention & Mitigation Plan
ff	<input checked="" type="checkbox"/>	Other: EPA floodplain map
gg	<input type="checkbox"/>	Other:
hh	<input type="checkbox"/>	Other:
ii	<input type="checkbox"/>	Other:

Additional support documents must be clearly named or titled to be consistent with the names or titles above.

SECTION A – APPLICATION INFORMATION

A1. General Information [MCA 82-4-432 & 82-4-403(6)] & [ARM 17.24.218]

1. Indicate which of the following is being requested (check one):

☒ **Permit** ☐ **Amendment** ☐ **Convert Limited Opencut Operation to a Permit**

☐ **Reclamation Only** (No further Opencut activities would occur, except reclamation): Complete Sections A1-1 through A1-8, A1-12, , A2, Section E, and provide a Reclamation Map and a Boundary Coordinate Table. The Department may also require the Operator to provide detailed site-specific conditions and reclamation plans, including but not limited to information for sections C2, C3 and D6.

For a **Permit** or to **Convert Limited Opencut Operation to a Permit**, skip to A1-3 and complete the remainder of this document. For an **Amendment**, proceed below:

2. For an **Amendment**:

a. Update all the information in this document.

b. The existing Opencut number is: _____

c. Identify all the purposes of the amendment:

☐ **Change Reclamation Date**

☐ **Change Postmining Land Use**

☐ **Change Site Name – Former Site Name was:**
accordingly (i.e. zoning, landowner, etc.)

Note: If site name is changed, all forms must be revised

- ☐ Change Seed Mix
☐ Change Mining Depth
☐ Add Fuel Storage
☐ Add Acreage
☐ Add the following processing equipment:
 ☐ None ☐ Asphalt Plant (answer D7-1a) ☐ Concrete Plant ☐ Overland Conveyor ☐ Crushing Equipment
 ☐ Pug Mill ☐ Screen ☐ Wash Plant ☐ Other:
☐ Change the Hours of Operation
☐ Change Landowner(s) – Previous Landowner's Name:
☐ Other:

3. Operator Name: PA Prospect Corp.

Site Name: Clark Fork Pit

Final Reclamation Date auto-populated from Section E1-1: **December 2031**

Operator Address: PO Box 785

City: 59019Columbus State: MT Zip Code: 59019

Office Phone # 406-322-9951 Cell # _____ Operator/Business Email: Bradywiggs@gmail.com

4. Site Contact Name: Brady Wiggs Site Contact Email: Bradywiggs@gmail.com Cell # 406-321-1550
 Note: All official correspondence will be sent to the Business email. The site contact name would be copied on emails.

5. PA Prospect Corp. requests that correspondence also be emailed to the consultant for this application (if not applicable proceed to #6).

Consultant Name: Charlie Johnston Consultant Email: cjohnstonengineering@gmail.com

6. Landowner 1 Name: PA Prospect Corp.

Address: PO Box 785

City: Columbus State: MT Zip Code: 59019

Phone #: 406-322-9951 Optional Additional Contact Information (e.g. email, other phone #): _____

If there is an additional landowner, provide contact information below; otherwise leave blank.

Landowner 2 Name: _____

Address: _____

City: _____ State: _____ Zip Code: _____

Phone #: _____ Optional Additional Contact Information (e.g. email, other phone #): _____

Additional Landowners (if applicable, use the space provided and use same format as above):

7. County where the proposed site is located: Missoula

8. Legal Description (Includes Permit Area, Access Roads, and Non-Bonded Areas):

Section(s) 25 & _____ Township 14 ☒ North or ☐ South Range 21 ☐ East or ☒ West

Section(s) _____ & _____ Township _____ ☐ North or ☐ South Range _____ ☐ East or ☐ West

Additional Sections, Township & Range (if applicable use same format as above): _____

9. What type of materials will be mined from the permit area?

- ☐ Bentonite ☐ Clay ☒ Gravel ☐ Peat ☐ Sand ☐ Scoria ☐ Soil
☐ Mixtures including any of the above substances (i.e. borrow material)
☐ Additional Information:

10. What processing equipment could be used in the permit area?

- ☐ None ☒ Asphalt Plant (answer D7-1a) ☐ Concrete Plant (answer D7-1b) ☒ Conveyor
☒ Crushing Equipment ☒ Pug Mill ☒ Screen ☐ Wash Plant (answer D7-1c)
☐ Other:

11. Estimated quantity of mine material to be excavated and removed from the entire permit area:

1, 100, 000 cubic yards

12. Total Permit Acreage Breakdown (acres must be entered to the nearest **TENTH** of an acre, and must match the acreages created by the Boundary Coordinate Table).

	Existing or New Permit Acres	Amendment Acres (if any)	Total Permitted Acres
a. Bonded Acres*	14.99		15.0
b. Non-Bonded Acres**	120.04		120.0
c. Bonded Access Road Acres***	0		0.0
Totals	135.0	0.0	135.0

Note: To ensure that the "Totals" display, use the Tab key after entering each acreage amount.

- a. *Although Government Operators do not "bond," they would fill in this row to display entire permitted acreage.
b. **Government Operators cannot have non-bonded acres and would not fill in this row.
c. ***Complete only if Landowner Consultation form states an access road would be permitted.

13. Private Operators Proposing to Permit Non-Bonded Area:

If Non-Bonded acreage is proposed, the Operator agrees not to disturb any Non-Bonded acreage for any Opencut purpose until: a) the Operator submits a *Request to Modify Bonded Acreage* form with appropriate attachments and a reclamation bond, and b) the DEQ provides **written approval** of the request.

A2. ADDITIONAL INFORMATION [MCA 82-4-432(1) & 82-4-434(2)] & [ARM 17.24.222]

1. If applicable, provide additional application information not addressed above.

Answer: BCT shows 14.99 bonded acres and 120.04 non-bonded acres.

SECTION B – PRE-MINE INFORMATION

Note: If a Pre-Application Meeting was conducted by the DEQ, information from the Inspection Report can typically be used to complete portions of Section B.

B1. DIRECTIONS TO SITE [ARM 17.24.221(6)]

1. Describe in detail how to get from the nearest town or public road intersection to the permit area. Provide directions that can be interpreted and followed by anyone viewing the Location Map for the site, both now and in the future (e.g. identify roads, mileposts, landmarks, and distances; include information on how to obtain keys or combinations for locks). Label the nearest town of public road intersection on the Location Map.

Answer: From I-90, take exit for Hwy. 10 and then turn onto Pulp Mill Rd. Go South at intersection of Mullan Rd. and continue on Mullan Rd. for 1.2 miles. The site is to your west.

B2. TOPOGRAPHY [MCA 82-4-403(11)(b)]

1. Describe in detail the terrain in and within 1,000 feet of the permit area (e.g. hills, valleys, ridges, drainages, cliffs, and benches).

Answer: Flat agricultural and pasture land in Clark Fork Valley with irrigation ditches and wetlands.

B3. LAND USES [MCA 82-4-403(11)(b)]

1. Indicate current land uses within the permit area.

☐ Cropland/Hayland ☐ Forest/Timberland ☐ Industrial/Commercial ☐ Oil/Gas
☐ Opencut Operation ☒ Pasture/Rangeland ☐ Residential ☐ Other:

2. Indicate current land uses within 1,000 feet of the permit area.

☒ Cropland/Hayland ☒ Forest/Timberland ☒ Industrial/Commercial ☐ Oil/Gas
☒ Opencut Operation ☒ Pasture/Rangeland ☒ Residential ☐ Other:

B4. STRUCTURES, FACILITIES, & SURFACE DISTURBANCES [MCA 82-4-434(2)(n)] & [ARM 17.24.218(1)]

1. Identify the manmade structures, facilities, or surface disturbances within the permit area.

☐ None ☐ Construction Project ☐ Farming ☒ Fences ☐ Industrial/Commercial
☐ Oil/Gas Structures or Pipelines ☐ Opencut Operation ☐ Overhead Power Lines or Facilities
☐ Residential ☐ Roads ☐ Underground Utilities (e.g. electrical, fiber optic, water, sewer, phone, etc.)
☒ Other: Water Wells.

Note: See additional requirements in Section D4 for utilities and infrastructure.

2. Identify the manmade structures, facilities, or surface disturbances within 1,000 feet of the permit area.

☐ None ☐ Construction Project ☒ Farming ☒ Fences ☒ Industrial/Commercial
☐ Oil/Gas Structures or Pipelines ☒ Opencut Operation ☒ Overhead Power Lines or Facilities

- ☒ Residential ☒ Railroad ☒ Roads ☒ Underground Utilities (e.g. electrical, fiber optic, water, sewer, phone, etc.)
☐ Other:

B5. SURFACE WATER FEATURES [ARM 17.24.218(1) & 17.24.221]

1. Identify any surface water features within the permit area.

Note: This includes features that may contain water at any time, including seasonal ponds, ephemeral drainages, runoff channels, ditches, floodways, etc. See Section D4 for additional Plan requirements for water features.

- ☐ None ☒ Ephemeral Drainage ☒ Irrigation Ditch/Canal ☐ Lake/Pond ☐ River– Name:
☐ Spring ☐ Stream/Creek – name: ☒ Wetlands ☐ Other:

2. Identify any surface water features within 1,000 feet of the permit area.

Note: This includes features that may contain water at any time, including seasonal ponds, ephemeral drainages, runoff channels, ditches, floodways, etc.

- ☐ None ☒ Ephemeral Drainage ☒ Irrigation Ditch/Canal ☒ Lake/Pond ☒ River– Name: Clark Fork
☐ Spring ☐ Stream/Creek – name: ☐ Wetlands ☒ Other: Water Wells

B6. VEGETATION [ARM 17.24.219(h) & 17.24.222]

1. Provide a list of the dominant grasses, forbs, shrubs and trees located within the permit area. If the species are not indicated in the check boxes below, check the “Other” box and list them.

- ☐ Basin Wildrye ☐ Big Bluestem ☐ Bluebunch Wheatgrass ☐ Blue Grama ☒ Canada Wildrye
☒ Cheatgrass ☐ Conifer ☐ Cottonwood ☐ Creeping Juniper ☒ Crested Wheatgrass ☐ Crop
☐ Curlycup Gumweed ☐ Green Needlegrass ☒ Idaho Fescue ☐ Indian Ricegrass
☒ Intermediate Wheatgrass ☐ Juniper ☒ Kentucky Bluegrass ☐ Needle & Thread Grass
☒ Prairie Junegrass ☐ Prairie Sandreed ☐ Rough Fescue ☐ Rubber Rabbitbrush ☒ Sagebrush
☐ Sedges/Rushes ☐ Sideoats Grama ☐ Slender Wheatgrass ☐ Smooth Brome ☐ Sweetclover
☐ Thickspike Wheatgrass ☒ Willow ☒ Western Wheatgrass ☐ Other: _____

2. Identify the Noxious Weeds present within the permit area.

If the species are not indicated in the check boxes below, check the “Other” box and list them.

- ☐ None ☒ Canada Thistle ☒ Dalmatian Toadflax ☐ Field Bindweed ☐ Houndstongue ☒ Knapweed
☐ Leafy Spurge ☐ Tansy Ragwort ☐ Whitetop ☐ Sulfur Cinquefoil ☐ Tamarisk (Salt Cedar)
☒ Other: Russian thistle.

B7. WILDLIFE [MCA 82-4-402(2) & 82-4-403(13) & 82-4-434(2)] & [ARM 17.24.219 & 17.24.222]

1. Indicate the fish and wildlife species in and within 1,000 feet of the permit area.

- ☐ Antelope ☐ Black Bear ☒ Coyotes ☒ Deer ☒ Elk ☒ Fish ☒ Fox ☐ Grizzly Bear ☒ Moose
☒ Raptors ☒ Rodents ☐ Sage Grouse ☐ Song Birds ☐ Upland Birds ☒ Waterfowl ☐ Wolves
☐ Other:

2. **Sage Grouse Consultation** - If sage grouse was checked above and the proposed permit boundary is in core area, general habitat, or connectivity habitat, the area is regulated by the Montana Sage Grouse Habitat Conservation Program.

To determine whether this site is located in sage grouse habitat, click on the below link to visit the Montana Sage Grouse Habitat Conservation Program <https://sagegrouse.mt.gov>.

- a. The permit boundary is located:

☒ **Outside of Sage Grouse Habitat** (If “Outside of Sage Grouse Habitat” or permitted prior to Sage Grouse Executive order, skip to B8)

☐ **Within Core Area** ☐ **Within General Habitat** ☐ **Within Connectivity Habitat**

Recommendations from the Sage Grouse Program must be addressed in the proper sections of this application (i.e. hours of operation, seed mix, etc.).

☐ **Additional Information:**

B8. WELLS (water, oil, gas, etc.) [ARM 17.24.218(1)(g) & 17.24.221]

1. In the table below, list the required information for wells in and within 1,000 feet of the permit area.

- Information and well logs can be obtained from the Ground Water Information Center (GWIC) at <http://mbmggwic.mtech.edu> or by using the “Mapping DEQ’s Data” found at <http://deq.mt.gov/Mining/opencut> (click on the “Mapping DEQ’s Data” tab).
- The DEQ recommends obtaining well information from the Montana Department of Natural Resources and Conservation (DNRC), and Board of Oil and Gas websites to determine the location of any oil and gas wells in the vicinity of the permit area.

- Additional information may be available from landowners or by conducting field measurements.
- Provide depths and static water levels in feet below the ground surface for all attached water wells.
- Well locations must be reasonably accurate. In cases where well locations are unavailable or appear inaccurate, field confirmation may be required.
- Locations of existing and proposed wells in and within 1,000 feet of the permit area must be shown and labeled on the Area Map or if more appropriate a separate Well Location Map.
- Well logs in excess of 1,000 feet from the proposed permit boundary can be submitted and shown below if they provide relevant information. If provided, well locations must be shown on the appropriate map.
- If there are no wells in and within 1,000 feet of the permit area, write “None” in the table below and skip to B8-3.

* Use these codes to fill in the “Use” Column below: D = Domestic, Ind = Industrial, I = Irrigation, L = Lawn & Garden M = Monitoring, P = Public, S = Stock, O = Other

Well Information Table

Well I.D. on Map	GWIC ID#	Well Owner	Distance & Direction from Permit Boundary	Total Well Depth (feet)	Static Water Level (feet)	*Use	Comments
W1	RE 284	Warren	East Boundary	127	17	D	
W2	RE 285	Stone Container	500' SE	25		D	
W3	RE 289	Unkown	West Boundary	25	13	D	
W4	71272	Mary Hinshaw	1000' SE	100	18	D	
W5	SMW-1	Stone Container	400' SE	30	17	M	
W6	SMW-20	Stone Container	SW Boundary	28	17	M	
W7	155164	Butler	1500' East	110	15	D	
W8	167188	Magnolia Estates	2000' SE	159	21	P	
W9	167189	Magnolia Estates	1800' SE	148	21	P	
W10	282161	Wood	1000' East	113	9	D	

Note: If there are additional wells check the appropriate box on page 2 and attach the Opencut Mining Section’s *Additional Well Data* form. Start the form with “W11” under the “Well I.D. on Map” column. The form is found here: <http://deq.mt.gov/Mining/opencut> (click on the “Forms” tab).

2. Attach the above identified Well Logs to this application and check the appropriate box on page 1.
3. Are there Public Water Supply wells located within 100 feet of the permit area that are used for public water supply?
☐ Yes ☒ No

If **Yes**, contact the DEQ Source Water Protection Program at 406-444-5546 to determine setbacks and restrictions and incorporate those into this application. **Further Information (if applicable): Please see Water Resource Assessment and & Ground Water Monitoring Plan for more defined water well info.**

B9. ADDITIONAL INFORMATION [MCA 82-4-432(1) & 82-4-434(2)] & [ARM 17.24.222]

1. If applicable, provide additional pre-mine site characteristics or circumstances not addressed above.
Answer: Please see the attached Water Resources Assessment and Ground Water Monitoring Plan in addition. There is no useful information that can be obtained regarding WW (ID 706494).

SECTION C – SITE PREPARATION AND PLANNING

C1. WATER TABLE LEVELS [ARM 17.24.218(1)(g)]

Complete and attach the *Determining Depth to Groundwater Worksheet* found here: <http://deq.mt.gov/Mining/opencut> (click on the “Forms” tab), check the appropriate box on page 2, and provide information below as determined by the *Determining Depth to Groundwater Worksheet*. Note: Seasonal high water levels may be influenced by irrigation and ditches and must be accounted for when determining groundwater elevations.

- The seasonal high water table is the highest level that water typically rises to each year.

- The seasonal low water table is the lowest level that water typically falls to each year.

1. The maximum depth of mining is: **6 feet below ground surface**
2. The seasonal high water table level is: **8 feet below ground surface**
3. The seasonal low water table level is: **10 feet below ground surface**
4. Water levels were determined by the following method(s):

☐ **Determining Depth to Groundwater Worksheet** (check box on page 2 and attach) ☒ **Other: Please see the Water Resource Assessment & Ground water monitoring plan attached herin by Morrison - Maierle.**

Seasonal high water table: **8.0** feet

Maximum depth of mining: **6.0** feet

Difference = **2.0** feet

- a. If the difference is ≥ 3 proceed to **Section C2**.
- b. If the difference is ≤ 0 , a pond and/or wetland will be left for final reclamation. **PA Prospect Corp.** must include "pond" or "wetland" as a postmining land use in **Section E2-2**, as well as complete **Section E3** & the *Pond & Wetland Design Worksheet*.
- c. If the difference is >0 and <3 , soil could become saturated or ground water could occur in some portions of the pit. Therefore, explain how **PA Prospect Corp.** will maintain a minimum of 3 feet of separation between the seasonal high water table and the reclaimed ground surface (e.g. The Operator will: backfill the site to maintain a minimum 3 feet of earthen material between water and the reclaimed ground surface; construct a permanent drainage mechanism; etc.):
☒ **PA Prospect Corp. would cease mining at or above the high water table and use on-site materials to backfill to ensure that a minimum of 3 feet of material is maintained above the seasonal high water table for final reclamation. No water feature would remain for final reclamation.**

☐ **Other/Additional Information:**

C2. SOIL AND OVERBURDEN [MCA 82-4-403(14) & 82-4-434(2)(c)] & [ARM 17.24.218(c-d) & 17.24.220(2)(b)]

1. **In the table below**, provide soil and overburden thickness data obtained from test holes excavated within the proposed permit area (bonded and non-bonded areas). **PA Prospect Corp.** is required to provide no less than three test holes spaced representatively to describe proposed permit areas of less than nine acres, and one test hole per each three-acre area for proposed permit areas of nine acres or more, with a maximum of 20 representatively spaced test holes for proposed permit areas that exceed 60 acres, or as otherwise approved by the DEQ.
 - **Clear, labeled photos showing the top three feet of the soil profile with a visible scale must be provided to the DEQ for each test hole. Soil photos must be labeled with the *Soil Test Hole ID* (see below table) and corresponding locations must be shown on the Site Map [ARM 17.24.221(3)]. Label the soil photos and Site Map with the proper *Test Hole I.D.* as provided in the table in Section C2-2 of the application (i.e. T1, T2, T3, etc.). Applications submitted with poor photos not meeting the soil guideline would be deemed incomplete.**
 - Test holes must be of sufficient depth to measure the thicknesses of soil and overburden (minimum of 3 feet deep).
 - Exposures of the soil and overburden profile, such as a roadcut, may be used in lieu of a test hole, as long as 3 feet of the profile is exposed and clear photos are taken.
 - The soil is usually darker than overburden, may contain roots, and typically extends deeper than just the top few inches of rich organic matter. The number of roots and degree of darkening typically decrease with depth. Soil is the "growth media" that allows for successful revegetation. Soil in many areas is rocky, but that does not preclude the need to save it for use in reclamation.
 - For tips on proper identification of soil depths and taking photos that will be accepted by the Opencut Mining Section, refer to the *Soil Guideline* found at: <http://deq.mt.gov/Mining/opencut> (click on the "Forms" tab)
 - NRCS soil data can be used as a reference but does not replace onsite soil data.

2. **Date test pits were dug: 08/12/19**
Logged by: Charlie Johnston

Soil Test Hole I.D. on Map	Soil Thickness (inches)	Overburden Thickness (inches)	Total Depth of Test Hole (ft)	Water encountered in Test Hole? (ft)	Optional Info (e.g. soil and overburden type, texture, or structure, rock content, root description, etc.)
T1	5	7	16	<input checked="" type="checkbox"/> No <input type="checkbox"/> Yes-Depth to water =	silty loam

T2	5	9	16	<input checked="" type="checkbox"/> No <input type="checkbox"/> Yes-Depth to water =	
T3	6	6	16	<input type="checkbox"/> No <input checked="" type="checkbox"/> Yes-Depth to water = 15	
T4	6	6	16	<input checked="" type="checkbox"/> No <input type="checkbox"/> Yes-Depth to water =	
T5	6	4	16	<input checked="" type="checkbox"/> No <input type="checkbox"/> Yes-Depth to water =	
T6	5	31	16	<input type="checkbox"/> No <input checked="" type="checkbox"/> Yes-Depth to water = 16	
T7	5	8	16	<input checked="" type="checkbox"/> No <input type="checkbox"/> Yes-Depth to water =	
T8	6	0	16	<input checked="" type="checkbox"/> No <input type="checkbox"/> Yes-Depth to water =	
T9	6	6	16	<input checked="" type="checkbox"/> No <input type="checkbox"/> Yes-Depth to water =	
T10	8	0	16	<input checked="" type="checkbox"/> No <input type="checkbox"/> Yes-Depth to water =	
T11	5	5	16	<input checked="" type="checkbox"/> No <input type="checkbox"/> Yes-Depth to water =	
T12	5	0	16	<input checked="" type="checkbox"/> No <input type="checkbox"/> Yes-Depth to water =	
T13	0	0	16	<input checked="" type="checkbox"/> No <input type="checkbox"/> Yes-Depth to water =	
T14	1	0	16	<input checked="" type="checkbox"/> No <input type="checkbox"/> Yes-Depth to water =	
T15	2	0	16	<input checked="" type="checkbox"/> No <input type="checkbox"/> Yes-Depth to water =	
T16	8	8	16	<input checked="" type="checkbox"/> No <input type="checkbox"/> Yes-Depth to water =	
T17	6	10	16	<input checked="" type="checkbox"/> No <input type="checkbox"/> Yes-Depth to water =	
T18	6	30	16	<input checked="" type="checkbox"/> No <input type="checkbox"/> Yes-Depth to water =	
T19	4	0	16	<input checked="" type="checkbox"/> No <input type="checkbox"/> Yes-Depth to water =	
T20	12	6	16	<input checked="" type="checkbox"/> No <input type="checkbox"/> Yes-Depth to water =	

3. If the minimum number of required test holes were not dug for this site, then explain in detail why not:

Note: This application may be found deficient if test holes do not meet the specifications described in C2-1 above, the *Soil Guideline*, and ARM 17.24.218(1)(c).

4. In the table below, provide soil and overburden thicknesses to be stripped and salvaged for reclamation to the nearest inch. If available, up to 24 inches of soil and overburden must be stripped, salvaged and replaced for reclamation. The soil to be stripped, salvaged and replaced for reclamation must include the top 24 inches of the soil profile.

Note: If overburden is a mine material or will be used as binder, an appropriate quantity must first be stripped and salvaged to satisfy the soil plus overburden replacement thickness requirement (24 inches cumulative).

Soil	Average Soil Thickness to be Stripped, Salvaged, Replaced for Reclamation (inches)
Permit Area Soil	6
Permitted Access Road Soil	0
Overburden	Average Overburden Thickness to be Stripped, Salvaged and Replaced for Reclamation (inches)
Permit Area Overburden	6
Total Soil & Overburden thickness to be Replaced for Reclamation (up to 24 inches required if available).	<u>12</u>

Note: Depending on the additional surface area created from Opencut mining, the actual soil depths replaced for reclamation may vary slightly from the amount noted above.

- a. Use this section to provide custom information pertaining to soil replacement (if applicable):
Two feet of reject fines (from screening activities), will be placed on the mine floor depth of 8 feet (aka high water table) and then covered with 0.5' of overburden and finally covered with 0.5' of topsoil giving 3' of soil separation against the high water table.
- b. If the average depth of soil at this site is 24 inches or less, skip to C3. If the average depth of soil at this site is greater than 24 inches, explain what will be done with the excess soil:
- ☐ Soil in excess of 24 inches will be stripped, salvaged and replaced for final reclamation.
- ☐ Soil in excess of 24 inches will not be saved for final reclamation, but will leave the site. **PA Prospect Corp.** understands they must strip, salvage and replace the top 24 inches of soil for final reclamation.
- ☐ Other: Explain

C3. EXISTING SITE CONDITIONS [ARM 17.24.221(3)]

1. Is an existing disturbance located within the proposed permit boundary (e.g. permitted, unpermitted, historical, Limited Opencut Operation, etc.)? ☐ Yes ☒ No
- If No, skip to C4. If Yes, Check the appropriate boxes below.
- a. ☐ All soil and overburden was stripped and salvaged from the disturbed area and remains on site.
 The location of the soil and overburden stockpiles must be identified on the Site Map.
Additional Description (if applicable):
- b. ☐ Soil and overburden from the disturbed area has been lost and/or removed from the site.
 The following quantity of soil **cubic yards** will be imported to the site to ensure the previously disturbed area is reclaimed to the productive postmining land use identified in this permit. Ensure the quantity stated in this section is added to the *Reclamation Bond Spreadsheet's* line item *Cost to Import, Purchase and Place Soil* and that it is identical to the quantity identified here.
Additional Description (if applicable):
- c. ☐ Soil from the area to be permitted would be used to reclaim the existing disturbance, and the soil identified in section C2-4 has been averaged to account for reclamation of both the existing disturbance and the undisturbed area.
- d. Will the disturbed area that is contained within the proposed permit boundary be used for further Opencut operations or will it be reclaimed only? ☐ Reclaimed Only ☐ Used for further Opencut Operations
Additional Description (if applicable):

C4. ACCESS ROADS [MCA 82-4-403(1) & 82-4-431(2)(c)] & [ARM 17.24. 202(1); 17.24.206(2); 17.24.218(1); 17.24.219(1)(e); & 17.24.221]

1. Access road(s) must meet the requirements of the Opencut Act and rules and be consistent with the Landowner Consultation form signed by the landowner.

C5. HOURS OF OPERATION [MCA 82-4-434](2)(m)] & [ARM 17.24.218(1)(f)]

1. The DEQ may impose reasonable limits on hours of operation to reduce adverse impacts on residential and Sage Grouse areas. **PA Prospect Corp.** must propose hours of operation by checking box “a”, “b” or “c” below (thereby adopting the hours stated), or by checking box “d” and providing the required information.
2. DEQ will assess the site conditions and may restrict the hours of operation on a case by case basis. If residential areas are within ½ mile of the proposed Opencut operation (with the potential exception of the landowner’s residence), DEQ may require Option “a.” Alternatively, the operator could obtain a signed letter from each residence stating alternative proposed hours of operation are acceptable.

Note: Equipment start-up and warmup is part of operations and can only occur within the below designated hours of operation. Equipment startup can occur for maintenance.

- a. ☐ Permitted hours and activities are as follows:

- Monday-Friday 7 am to 7 pm - Activities: All permitted activities allowed
- Saturday 8 am to 5 pm - Activities: Maintenance only

Temporary Extended Hours: The above restricted hours of operation apply unless adjacent property owners and residents are notified of temporary extended hours for public works projects. Temporary extended hours are 24 hours a day, 7 days a week, Monday through Saturday. Extended hours must not exceed 30 consecutive working days, with no more than 30 days of extended hours in any six-month period. At least 30 days must elapse between periods of extended hours.

Prior to commencing temporary extended hours, **PA Prospect Corp.** must:

- Notify in writing the adjacent property owners and residents within ½-mile of the permit area;
- Notify in writing the County Commissioners;
- Publish notice of the extended days and hours of operation in the local newspaper at least seven days prior to commencing operations within the extended hours; and
- Keep and maintain a complete and accurate record of the hours operated. **PA Prospect Corp.** shall submit the record to the department within two work days after receipt of a request from the department.

- b. ☒ Permitted hours and activities are as follows:

- Monday–Friday: 7:00 am–7:00 pm - Activities: All permitted activities allowed.

- c. ☐ Site is located in Sage Grouse Core, General Habitat, or Interconnectivity area, and the permitted hours of operation are restricted to those stipulated in the attached Montana Sage Grouse Habitat Conservation Program’s letter. Check the box for this section and “d” below and enter the required Sage Grouse hours.

- d. ☐ Permitted hours and activities are as follows:

- Mon–Fri: ____ am– ____ pm Activities: ☐All Activities ☐Crushing ☐Hauling ☐Loading
☐Maintenance ☐Mining ☐Other:
- Saturday: ____ am– ____ pm Activities: ☐All Activities ☐Crushing ☐Hauling ☐Loading
☐Maintenance ☐Mining ☐Other:
- Sunday: ____ am– ____ pm Activities: ☐All Activities ☐Crushing ☐Hauling ☐Loading
☐Maintenance ☐Mining ☐Other:

Additional information:

C6. MAPPING [MCA 82-4-403(11)(b)] & [ARM 17.24.221]

1. The Site, Area, Reclamation and Location Maps must meet the requirements of the Opencut Mining Act, associated rules, and Map Guideline. The Map Guideline can be found here: <http://deq.mt.gov/Mining/opencut> (click on the “Forms” tab).

C7. MARKERS [ARM 17.24.218(1)(a)]

1. The site must be marked in accordance with the Opencut Mining Act and associated rules.

C8. ADDITIONAL INFORMATION [MCA 82-4-432(1) & 82-4-434(2)] & [ARM 17.24.222]

1. If applicable, provide additional site preparation and planning information not addressed above.

Answer: Operator will adjust mining depth as per the WRA which specifies average high water table to existing

elevations. This will be the guide for mining across the entire site.

SECTION D – WATER PROTECTION, MINING & PROCESSING

D1. WATER PROTECTION [MCA 82-4-434(2)(l)] & [ARM 17.24.218(1)]

1. **PA Prospect Corp.** must:
 - a. Protect on-site and off-site surface water and ground water from adverse changes in quality and quantity that could be caused by Opencut operations.
 - b. Prevent, minimize, or mitigate adverse impacts to on-site and off-site surface and ground water systems and structures that could be caused by Opencut operations.
 - c. Properly establish, use, and reclaim hydrologic structures and systems used for Opencut operations.
 - d. Keep waste and stationary equipment above the seasonal high-water level of surface and ground water and dispose of all petroleum, solvent, and chemical wastes in compliance with applicable state laws and rules.
 - e. **PA Prospect Corp.** has reviewed and will comply with the current DEQ *Spill Management and Reporting Policy* document found on the DEQ's Enforcement website.
2. **PA Prospect Corp.** has consulted DEQ Water Protection Bureau (WPB) and will obtain all required Montana Pollutant Discharge Elimination System (MPDES) permits including but not limited to:
 - Authorization under the Stormwater Industrial General Permit (a.k.a. Stormwater Industrial (SWI) or Multi-Sector General Permit (MSGP), and/or
 - Authorization under the Sand and Gravel General Permit (required for pit dewatering or process water discharges off-site into a state water).

All BMPs would be installed, maintained, and operated in accordance with the MSGP issued by the Water Protection Bureau and/or other requirements of the Water Protection Bureau to prevent the discharge of pollutants to a state water.

- a. Determine if a Storm Water Permit or Sand and Gravel General Permit is required for your Opencut operation by reviewing the "Water Protection Bureau Permitting Guide: Sand and Gravel Operations" located at this link <http://deq.mt.gov/Mining/opencut> (click on the "Forms" tab), and by contacting the Montana Department of Environmental Quality's Water Protection Bureau at (406) 444-5546.

Date WPB was Contacted for the proposed Site: 10-17-19

Indicate which of the below permits may be required from the Montana Department of Environmental Quality's Water Protection Bureau:

☐ None ☒ Storm Water Permit ☐ Sand and Gravel General Permit ☐ Other:

D2. FUEL DISPENSING & FUEL STORAGE [MCA 82-4-434(2)] & [ARM 17.24.218(1)(i)]

1. **PA Prospect Corp.** agrees to manage fuel as follows:
 - a. Routinely inspect and maintain fuel tanks, guard posts, secondary containment, fittings, piping, hoses, filters, and dispensers to prevent leaks and spills. The Department recommends using the *Aboveground Storage Tanks Self-Inspection Checklist* available from the Petroleum Tank Release Compensation Board at: <http://deq.mt.gov/Portals/112/DEQAdmin/PET/Documents/Forms/StorageTankChecklist.pdf>.
 - b. Retrieve, handle, and dispose of spilled fuel and contaminated materials and soil in a lawful manner.
 - c. Report a fuel spill of any quantity that reaches state waters or is greater than 25 gallons to the Montana Spill Hotline (406-324-4777). Note: "State waters" as defined in 75-5-103, MCA is defined as follows:
 "State waters" means a body of water, irrigation system, or drainage system, either surface or underground.
2. **Will there be stationary fuel storage on-site, mobile fueling on-site, or any type of on-site fueling?** ☒ Yes ☐ No
 If No, skip to Section D3.
 Note: In accordance with ARM 17.24.218(1)(i), off-site fuel storage and fueling must be conducted in accordance with current codes adopted by the state fire marshal.
 If Yes, **PA Prospect Corp.** must fill out and attach the *Fuel Guideline for Spill Prevention & Management Worksheet* and check the appropriate box on page 1.
3. Additional Information (if applicable):
Please see supplemental attachment -fueling station

D3. WATER MANAGEMENT & USE [MCA 82-4-434(2)(l)] & [ARM 17.24.218(1)(g, h & i)] & [ARM 17.24.219(1)(b)]

1. Indicate the proposed use(s) of water:

☐ Asphalt Plant ☐ Concrete Batch Plant ☒ Dust Control (e.g. roads, crusher, etc.) ☐ Pug Milling
☐ Wash Plant ☐ Other:

- a. Is the water source within 300 feet of the permit area? ☐ Yes ☒ No

If **No**, skip to D3-1b.

If **Yes**, identify the source of the water to be used and show its location on a map.

☐ Irrigation Ditch ☐ Pit ☐ Pond ☐ Well ☐ Other:

- b. Will water be stored on-site? ☐ Yes ☒ No

If **No**, skip to D3-1c.

If **Yes**, what will the water be stored in?

☐ Detention/Retention Pond ☐ Lined Detention/Retention Pond ☐ Water Storage Tank
☐ Other:

- c. **PA Prospect Corp.** has consulted with DNRC and understands the requirements regarding water rights and ground water development related to this Opencut operation. **PA Prospect Corp.** has or will obtain the appropriate and applicable water rights to conduct the activities identified in D3-1.

- d. **PA Prospect Corp.** must take all necessary precautions and measures to protect the water rights of other parties.
☒ **PA Prospect Corp. Agrees: Additional Information (if applicable):**

2. Will dewatering be conducted at this site? ☐ Yes ☒ No

If **No**, skip to Section D4.

If **Yes**, ensure the appropriate boxes in Section D1-2 above are checked indicating the permit required from the DEQ Water Protection Bureau. Show the location of all pertinent features related to dewatering on the Site Map and provide the following information.

- a. Describe how the site will be dewatered:

☐ Surface water flow from site via a ditch, drainage channel, etc.

☐ Pumping from: ☐ Pond ☐ Pit ☐ Wells ☐ Other:

☐ Other:

- b. Where will the water be discharged?

☐ Pond ☐ Pit ☐ Ditch ☐ Creek ☐ River ☐ Ground Surface ☐ Wells ☐ Wetland

☐ Other:

- c. Additional Information (if applicable):

D4. SETBACKS, EASEMENTS, & PROHIBITED AREAS [MCA 82-4-434(2)] & [ARM 17.24.218(1)(h-k) & 17.24.221]

1. The Opencut Act states that the DEQ cannot accept a plan of operation unless the plan provides that surface water and ground water will be given appropriate protection, consistent with state law, from deterioration of water quality and quantity that may arise as a result of the Opencut operation [MCA 82-4-434 (2)(1)].

Will Opencut operations be conducted within a waterway (e.g. ephemeral drainage, river, stream/creek, pond/lake, wetland or other surface water feature)? ☐ Yes ☒ No

If **No**, skip to D4-2.

If **Yes**, complete the *Stream/Waterway Worksheet* to guide **PA Prospect Corp.** through the requirements of the Opencut Mining Act. The *Stream/Waterway Worksheet* is found here <http://deq.mt.gov/Mining/opencut> (click on the "Forms" tab).

Attach the *Stream/Waterway Worksheet* and required criteria to this application and check the appropriate box on page 2.

2. Are there utilities, infrastructure, improvements, or easements within the proposed Opencut boundary?

Note: Features outside the permit boundary that have easements that extend within the permit boundary would require documentation. These features may include transmission lines, pipelines, ditches, etc.

☒ Yes ☐ No

If **No**, skip to D4-3.

If **Yes**, show the utilities, infrastructure, improvements or easements and/or required setbacks on the Site Map and/or Area Map, and complete "a" and "b" below:

- a. The width of required setbacks or easements within or adjacent to the proposed Opencut boundary are as follows:

☒ Ditch: Setback/Easement = 30 ft.

☒ Above Ground Utilities (e.g. power lines, poles, structures, etc.): Setback/Easement = 10 ft.

☐ Underground Utilities (e.g. gas, oil, fiber optic, etc.): Setback/Easement = _____ ft.

☐ Road: Setback/Easement = _____ ft.

☒ Other: Setback/Easement = 25 ft.

Further Explanation (if applicable): 25 ft. setbacks for water wells in permitted site as per EPA-see supplemental dd.

- b. **PA Prospect Corp.** must provide documentation from the dominant estate holding the easement (e.g. utility company, ditch rider, agency, private individual, etc.) describing its requirements. Check the appropriate box below and on page 2, and attach the documentation.
- ☒ **Easement holder has requirements for a setback or easement and documentation is attached.** These may include: **a)** the required setback; **b)** crossing requirements; **c)** maximum ground slope allowed; and **d)** any other requirements for activities conducted under, over, or adjacent to the easement or the infrastructure it contains (e.g. inspections, safety, excavation, stockpiling, etc.).
- ☐ **Easement holder has no requirements for a setback or easement and documentation is attached.**

3. Are there drainages, waterways, or other areas within or adjacent to the proposed permit boundary where Opencut operations would be prohibited, and from which a setback or buffer would be required [ARM 17.24.218(1)(h & j)]? ☒ **Yes** ☐ **No**

If **No**, skip to D5.

If **Yes**, check those that apply, provide the buffer/setback distance from the edge of the feature, and show its location on the Site Map:

- a. ☒ **Ephemeral Drainage:** Setback from edge of defined channel = 30 ft.
- b. ☐ **River:** Setback from edge of defined channel = _____ ft.
- c. ☐ **Stream/Creek:** Setback from edge of defined channel = _____ ft.
- d. ☐ **Pond/Lake:** Setback from high water mark = _____ ft.
- e. ☒ **Wetland:** Setback from wetland = 30 ft.
- f. ☐ **Other:** _____ Setback = _____ ft.

Further Explanation (if applicable): **Please see the WRA and GWM reports showing floodplain data. Furthermore, fencing will be common orange fluorescent temp fencing attached to metal posts which is common for easements/offsets and common due to visibility and will clearly define said boundary. Furthermore; access into the site will only be to the east onto Mullan Rd**

4. Is the site or a portion of the site located within the floodplain or floodway? Click the following link to view the FEMA Flood Map Service: <https://msc.fema.gov/portal/home>.

☒ **Yes** ☐ **No**

If **No**, skip to D5-1.

If **Yes**, provide a letter, permit, or other document from the local county floodplain administrator stating whether there are requirements, restrictions, etc., for this site and update this application as necessary to be consistent with any requirements.

D5. MINING DESCRIPTION [MCA 82-4-434(2)] & [ARM 17.24.218(1)]

1. Is the site expected to be worked continuously or intermittently?
- ☒ **Worked continuously (i.e. year round)**
- ☐ **Worked intermittently (i.e. on occasion when material is needed)**
- Additional information (if needed):
2. Will any of the processing equipment identified in Section A1-10 be moved on-site and off-site as needed, or is it expected to remain on-site during the life of the permit?
- ☐ **No Processing Equipment** ☒ **Remain on-site** ☐ **Move on-site and off-site as needed**
- ☐ **Additional Information:**
3. Will processing equipment be stationary or move with the highwall as mining progresses across the site?
- ☐ **No Processing Equipment.**
- ☒ **Mobile processing equipment checked in A1-10 and mine material stockpiles would remain in one general location throughout the life of the permit (location is identified on Site Map).**
- ☐ **Mobile processing equipment checked in A1-10 and mine material stockpiles would move with mining activity (i.e. migrate with the highwall).**
- Further Explanation** (if applicable):
- ☐ **Other:**
4. Typically, the following excavating or hauling equipment is used on-site:
Backhoe, Dozer, Dump/Haul Truck, Excavator, Loader, Scraper and Skidsteer.
- If applicable, identify any other equipment that may be used on-site:
- ☐ **Drag Line** ☐ **Dredge - Type:** ☐ **Other:**
5. Opencut Operation Mining Direction:
- a. Describe where Opencut operations would begin at this site (e.g. north corner, west corner, southeast corner, existing disturbance, etc.):
- Opencut activities will begin at: northeast corner**

- b. Describe the direction that Opencut operations would progress across the site over time (e.g. north to south, southeast to west then north, etc.):

Opencut activities will progress: southwest to west

6. If there are no non-bonded areas, skip to [Section D5-7](#) below. If the permit boundary contains non-bonded areas:

- a. Describe where Opencut operations will begin in the proposed non-bonded area(s), once they are bonded (e.g. north corner, west corner, southeast corner, center, disturbance, etc.):

Answer: southeastern corner

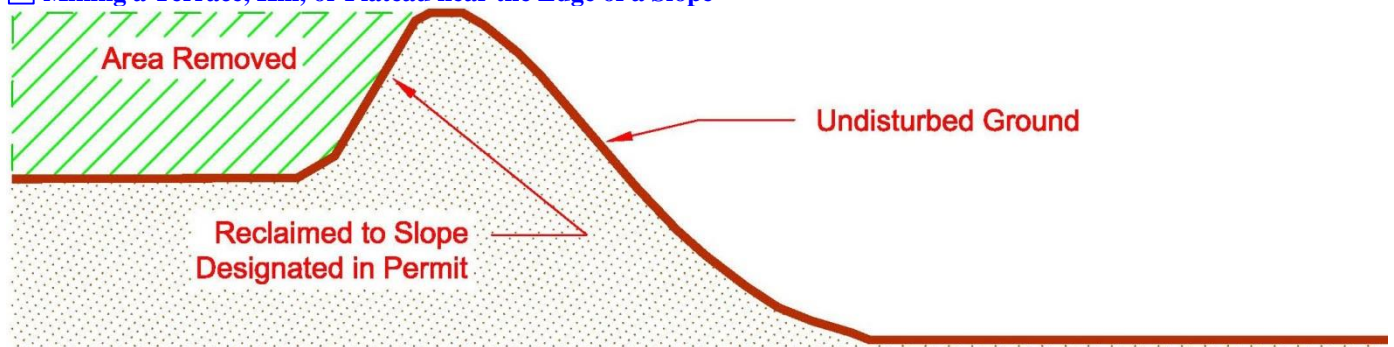
- b. Describe in which direction the Opencut operation will progress in the proposed non-bonded area(s), once they are bonded (e.g. north to south, southeast to west then north, clockwise from center, etc.):

Answer: north to west

Note: PA Prospect Corp. must submit a *Request to Modify Bonded Acreage* and obtain written approval from the DEQ before any Opencut activities (i.e. disturbance, stripping, mining, parking, etc.) can be conducted in any non-bonded area(s).

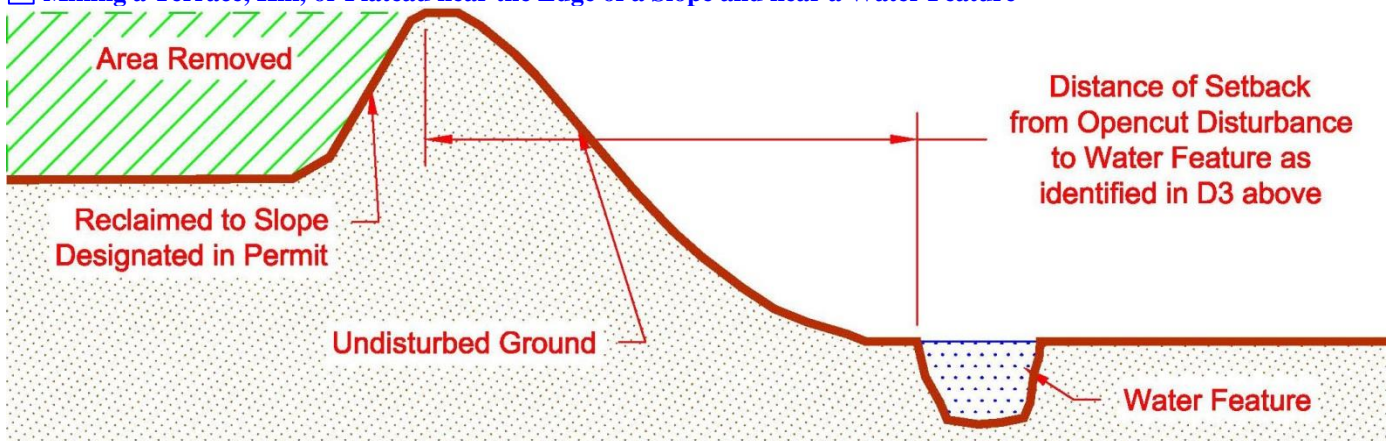
7. Choose all scenarios below that best describe the method of mining across the entire site. If none of the scenarios depict how the site would be mined, complete "7j" below with a detailed explanation.

- a. ☐ **Mining a Terrace, Hill, or Plateau near the Edge of a Slope**



This mining method would be implemented at or near the following locations within the permitted boundary (check all that apply) ☐All ☐North ☐South ☐West ☐East ☐Northwest ☐Northeast ☐Southwest ☐Southeast
Additional Information:

- b. ☐ **Mining a Terrace, Hill, or Plateau near the Edge of a Slope and near a Water Feature**



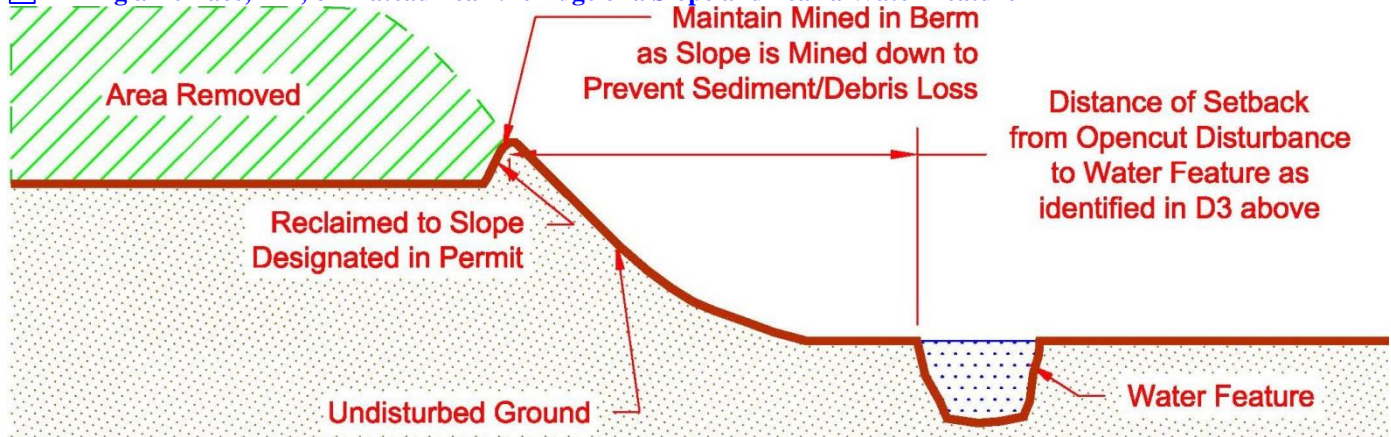
This mining method would be implemented at or near the following locations within the permitted boundary (check all that apply) ☐All ☐North ☐South ☐West ☐East ☐Northwest ☐Northeast ☐Southwest ☐Southeast
Additional Information:

- c. ☐ **Mining a Terrace, Hill, or Plateau near the Edge of a Slope**



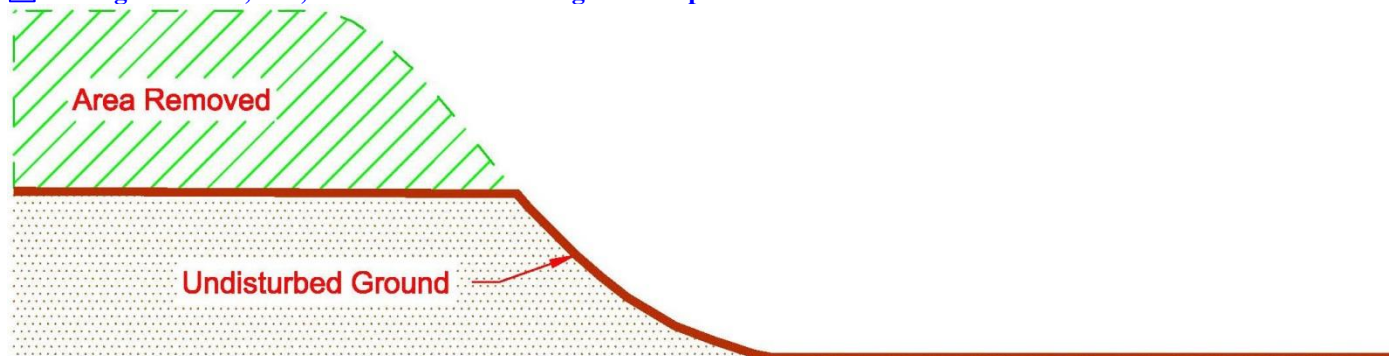
This mining method would be implemented at or near the following locations within the permitted boundary (check all that apply) ☐All ☐North ☐South ☐West ☐East ☐Northwest ☐Northeast ☐Southwest ☐Southeast
Additional Information:

- d. ☐ Mining a Terrace, Hill, or Plateau near the Edge of a Slope and near a Water Feature



This mining method would be implemented at or near the following locations within the permitted boundary (check all that apply) ☐All ☐North ☐South ☐West ☐East ☐Northwest ☐Northeast ☐Southwest ☐Southeast
Additional Information:

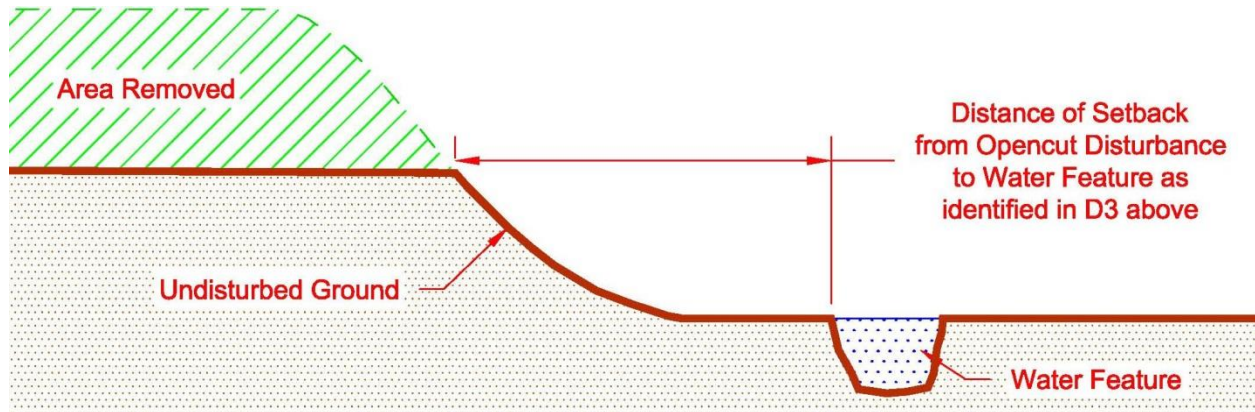
- e. ☐ Mining a Terrace, Hill, or Plateau near the Edge of a Slope



This mining method would be implemented at or near the following locations within the permitted boundary (check all that apply) ☐All ☐North ☐South ☐West ☐East ☐Northwest ☐Northeast ☐Southwest ☐Southeast
Additional Information:

- i. This mining method requires **PA Prospect Corp.** to ensure that no sediment or debris erodes or is pushed down the slope. **PA Prospect Corp.** would implement, as necessary, erosion control measures at the edge of the slope or slightly downslope (within permit boundary) to prevent loss of sediment and debris.

- f. ☐ Mining a Terrace, Hill, or Plateau near the Edge of a Slope and near a Water Feature



This mining method would be implemented at or near the following locations within the permitted boundary (check all that apply) ☐All ☐North ☐South ☐West ☐East ☐Northwest ☐Northeast ☐Southwest ☐Southeast
Additional Information:

This mining method requires **PA Prospect Corp.** to ensure that no sediment or debris erodes or is pushed down the slope. **PA Prospect Corp.** would implement, as necessary, erosion control measures at the edge of the slope or slightly downslope (within permit boundary) to prevent loss of sediment and debris.

g. ☒ Mining a Relatively Flat Area to Create a Depression



This mining method would be implemented at or near the following locations within the permitted boundary (check all that apply) ☒All ☐North ☐South ☐West ☐East ☐Northwest ☐Northeast ☐Southwest ☐Southeast
Additional Information:

h. ☐ Mining a Hill or Knob and Reclaiming it to the Approximate Elevation of Adjacent Ground



This mining method would be implemented at or near the following locations within the permitted boundary (check all that apply) ☐All ☐North ☐South ☐West ☐East ☐Northwest ☐Northeast ☐Southwest ☐Southeast
Additional Information:

i. ☐ Excavating into a Hillside and Not Mining Below Existing Grade



This mining method would be implemented at or near the following locations within the permitted boundary (check all that apply) ☐All ☐North ☐South ☐West ☐East ☐Northwest ☐Northeast ☐Southwest ☐Southeast
Additional Information:

j. ☐Other Scenario
Describe:

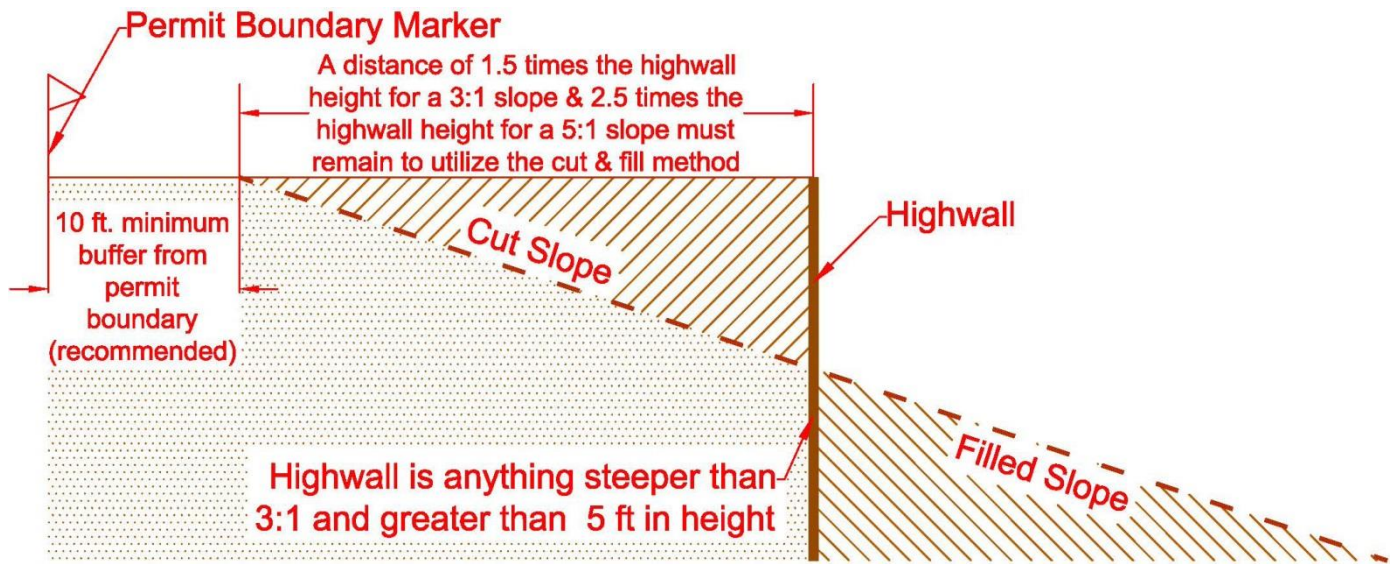
8. Any slope steeper than 3:1 with a height of 5 feet or greater, present for any length of time, is considered to be a highwall. Will this site have highwalls? ☐No ☒Yes If Yes, skip to D5-8b.

a. If No, explain in detail how this site will be mined without ever creating a highwall on-site. Note that mining without a highwall is not typical and is difficult to achieve.

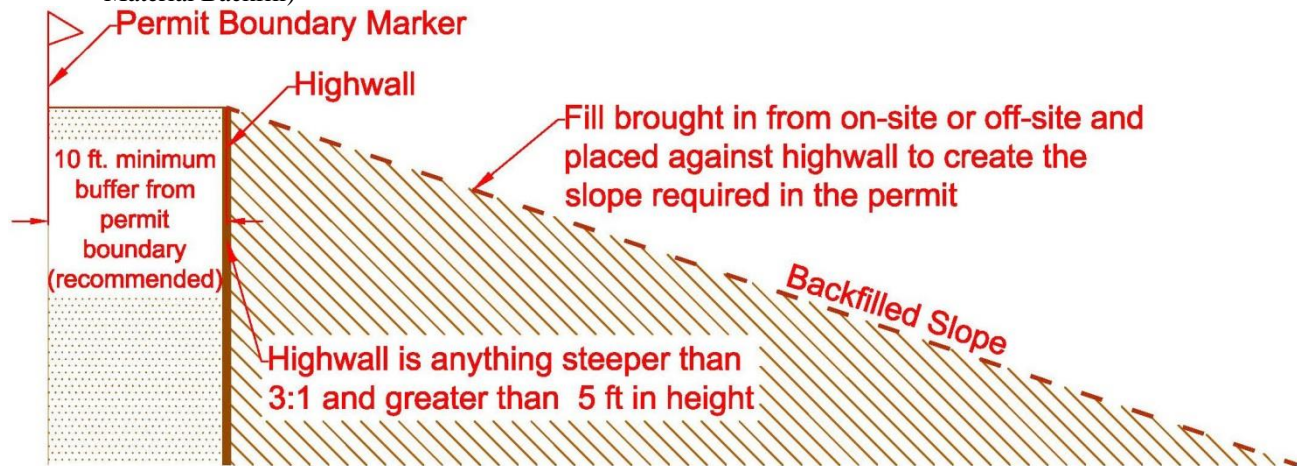
Answer:

b. If Yes,

- i. The maximum **length** of highwall on-site at any given time will be: 1000 linear feet. Note: This number must be used on the *Reclamation Bond Spreadsheet*.
- ii. The maximum **height** of highwall on-site at any given time will be: 6 feet. Note: This number must be used on the *Reclamation Bond Spreadsheet* and will typically be consistent with the maximum depth of mining (see [Section C1-1](#)).
- iii. If the maximum height of highwall identified in D5-8 above is not identical to the maximum mine depth identified in C1-1 (i.e. 6), explain in detail how the site will be mined:
- iv. Choose the highwall scenario below that best depicts how this site will be mined:
 - ☒ **Cut & Fill Scenario** (complete Highwall section on *Reclamation Bond Spreadsheet*)
 - **PA Prospect Corp.** understands that choosing this scenario requires that a buffer of unmined area be kept between the highwall and the permit/bonded boundary. Therefore, **PA Prospect Corp.** will maintain an adequate buffer to allow for cut-and-fill to be conducted.
 - **NOTE**: It is recommended that if the cut-and-fill scenario is to be used, the maximum advanced position of the highwall be clearly marked on the ground with durable markers to ensure enough material remains in place for slope reduction.



- ☐ **Backfill Scenario for areas where the Cut & Fill Method is not an Option** (Complete Section D6 – Mine Material Backfill)



D6. MINE MATERIAL BACKFILL [ARM 17.24.218(1) & 17.24.219]

1. If “Backfill Scenario” was chosen in D5-8(a) or if any mine area backfill locations are planned (e.g. using material to raise the level of the pit floor to accomplish the reclamation plan), complete this section. If not, skip to Section D7.

☐ **Highwall Backfill*** ☐ **Mine Area Backfill****

Show the planned backfill location(s) on the Site Map or Reclamation Map and provide the following information:

- a. Describe where the backfill material will come from:

☐ **On-site – Describe:**

☐ **Off-site- Describe:**

- b. Material type(s) to be used as backfill (check all that apply):

☐ **Pit Run** ☐ **Gravel** ☐ **Oversize Rock** ☐ **Reject Fines** ☐ **Backhaul (Clean Fill Only)**

☐ **Other:**

***Highwall Backfill:** **PA Prospect Corp.** must identify the linear feet, height, and slope of highwall to be backfilled on the *Reclamation Bond Spreadsheet* under “Highwall Backfill.” Additionally, **PA Prospect Corp.** must bond for transport/placement cost for the quantity of material to be placed against the highwall for backfill under the “Backfill Transport/Placement” cost line item (\$2/cy for on-site generated backfill and \$15/cy for off-site generated backfill).

****Mine Area Backfill:** **PA Prospect Corp.** must identify the acreage, depth, and compaction percentage on the *Reclamation Bond Spreadsheet* under “Mine Area Backfill.” Additionally, **PA Prospect Corp.** must bond for transport/placement cost for the quantity of material to be placed on-site for backfill under the “Backfill Transport/Placement” cost line item (\$2/cy for on-site generated backfill and \$15/cy for off-site generated backfill).

D7. FACILITIES [MCA 82-4-434] & [ARM 17.24.218(1)(e), ARM 17.24.218(1)(i) & 17.24.219(1)(b)]

1. If an Asphalt Plant, Wash Plant, or Concrete Plant was checked in A1-2c or A1-10 above, complete this section. If **Not**, skip to D7-2.
 - a. ☒ **Asphalt Plant** – If stationary or near a water feature, identify the specific or general location on the Site Map.
 - Must be checked in section A1-10 for a new permit and A1-2c for an Amendment
 - Must remain in compliance with D1-1.
 - i. Where will the asphalt plant be set up?

Answer: Asphalt plant will be setup in the eastern portion of the site on stripped, non-mined ground maintaining over 3' vertical separation from groundwater.
 - ii. A small amount of asphalt waste generated from daily startup and shutdown of the asphalt plant is expected; therefore, a maximum of 300 cubic yards of asphalt can be located onsite, near the asphalt plant. However, the asphalt waste must be removed when the asphalt plant is removed from the site, unless the site is permitted and bonded to store asphalt onsite.
 - iii. Describe additional restrictions or commitments on location of asphalt plant (placement away from water, residences, etc.)

Placement of asphalt plant will be over 200 ft. from any water bodies/drainages.
 - b. ☐ **Concrete Plant** - If stationary, or near a water feature, identify the specific or general location on the Site Map.
 - Must be checked in section A1-10 for a new permit and A1-2c for an Amendment
 - i. Where will the concrete plant be set up?

Answer:
 - ii. Describe what will be done with wastewater created from the concrete plant.
 - ☐ **PA Prospect Corp.** will dispose of wastewater in an off-site location, greater than 300 feet from the permitted boundary, and in an area that would not impact surface or ground water.
 - ☐ **PA Prospect Corp.** will dispose of wastewater on-site or within 300 feet of the permitted boundary, and in an area that would not impact surface or ground water (location must be shown on Site Map).
 - ☐ **Other: Describe:**
 - iii. Where will truck washouts occur?
 - ☐ **PA Prospect Corp.** will conduct truck washouts in an off-site location, located greater than 300 feet from the permitted boundary, and in an area that would not impact surface or ground water.
 - ☐ **PA Prospect Corp.** will conduct truck washouts on-site in or within 300 feet of the permitted boundary, and in an area that would not impact surface or ground water (location must be shown on Site Map).
 - ☐ **Other: Describe:**
 - iv. Describe how and where return loads and excess or reject product will be handled or stored. If on-site or within 300 feet of the permitted boundary, show the location on the Site Map.
 - ☐ **Concrete will be poured into casts to make products**
 - ☐ **Concrete will be poured on-site and buried under 3 feet of material suitable for sustaining the postmining land use.**
 - ☐ **Other:**
 - c. ☐ **Wash Plant** - If stationary, or near a water feature, identify the specific or general location on the Site Map.
 - Must be checked in section A1-10 for a new permit and A1-2c for an Amendment
 - i. Where will the wash plant be set up?

Answer:
 - ii. How many settling ponds will be used for the wash plant? ☐1 ☐2 ☐3 ☐4

☐ **Other** _____
 - iii. What will the approximate depth of the settling pond(s) be? **Answer:** _____ **feet**
 - iv. Will settling pond(s) be lined? ☐No ☐Yes

If Yes, type of liner:
 - v. Where will the wash plant obtain its water?
 - ☐ **On-site well or well within 300 feet of permit boundary** (Identify location on Site Map)
 - ☐ **Surface water source within 300 feet of permit boundary** (Identify location on Site Map)
 - ☐ **Source located greater than 300 feet from permitted boundary**
 - ☐ **Other:**
 - vi. Will the water from the wash plant be recycled back into the wash plant? ☐Yes ☐No

If **No**, explain:
 - vii. **PA Prospect Corp.** must show the location of the wash plant and any settling ponds or other wash plant features on the Site Map.
 - viii. If **PA Prospect Corp.** attaches the Opencut Mining Section's *Wash Plant Settling Pond Guideline*, check the appropriate box on page 2.

2. Will salt or a salt mixed with product be stored on-site? ☐ Yes ☒ No

If No, skip to D8.

If Yes, complete the following:

- Show the proposed salt material stockpile(s) on the Site Map.
- Indicate the maximum quantity of salt or salt product that would be stored on-site: cubic yards
- Describe how salt materials would be stored on-site:
Storage Pad: ☐ Asphalt Pad ☐ Concrete Pad ☐ Other Impermeable Surface – Describe:
Cover: ☐ Enclosed Structure ☐ Roof Only ☐ Tarp ☐ Other Cover – Describe:
Other Storage Method:
- Describe the measures to be taken to protect on and off-site surface water and ground water from deterioration of water quality due to salt storage per 82-4-434(2)(l), MCA & ARM 17.24.218(1)(h).

Answer:

D8. ASPHALT & CONCRETE RECYCLING [ARM 17.24.206; 17.24.219(1)(b); & 17.24.221(3)]

1. **Asphalt Recycling** – Typically, recycling involves accumulating materials containing asphalt, crushing these materials periodically, and stockpiling the resulting crushed asphalt product as is or blending it with other suitable materials. These recycled products are commonly used to surface roads, and operations permitted to operate an asphalt plant may also use these as feed into the plant.

Asphalt is considered to have the potential to impact water quality. As a result:

- An operation that imports materials containing asphalt must be permitted to store the debris awaiting recycling.
Note: Imported debris may be a mixture of various materials (e.g. asphalt, concrete, soil, gravel, etc.). However, if the debris contains asphalt, it must be permitted as asphalt storage.
- Similarly, if a site permitted to operate an asphalt plant will stockpile asphalt produced on-site (e.g. excess or reject material), the operation must be permitted and bonded for asphalt storage.

- a. Will asphalt or materials containing asphalt be stockpiled at the site? ☐ Yes ☒ No

If No, skip to D8-1b.

If Yes, **PA Prospect Corp.** must comply with the following requirements for stockpiled asphalt:

- The maximum amount of asphalt or material containing asphalt awaiting recycling that will be on-site at any time is cubic yards.
- This maximum value must be used in the *Reclamation Bond Spreadsheet* to calculate the cost to either recycle (i.e. crush) the asphalt, or dispose of it off-site in a lawful manner.
- Asphalt must be stored in the “asphalt stockpile area” shown on the Site Map.
- Asphalt must be kept out of ground water and surface water (runoff channels, puddles, ponds, etc.); the only water that should come in contact with the asphalt stockpile is rain and snow.
- Imported asphalt must not be buried or otherwise disposed of on-site. During the final reclamation process, on-site asphalt stockpiles must be: **a)** removed from the site and disposed of in a lawful manner, or **b)** recycled into useful products which are removed from the site or used on-site to surface roads that are included in the approved postmining land use. Only on-site generated asphalt that has never left the site can be buried on-site as long as it is buried at least 25 feet above the ordinary high water table and under 3 feet of clean fill material suitable for sustaining the postmining vegetation.

- b. Will on-site generated asphalt be buried on-site? ☐ Yes ☒ No

If No, skip to D8-2.

If Yes, item C of the *Landowner Consultation Form* must be checked “Yes.” In addition, § 82-4-434(2)(l), MCA requires the DEQ to protect surface and ground water from deterioration of water quality and quantity that may arise as a result of the Opencut operations. The Opencut Mining Section may require that a ground water monitoring plan and monitoring well installation plan be designed to protect ground water. Therefore, the below items must be addressed to bury on-site generated asphalt.

- What is the distance between the bottom of the proposed buried asphalt and the ordinary high water table?
Answer: feet. (Buried on-site generated asphalt must be located at least 25 feet above the ordinary high water table.)
- How was the elevation of the ordinary high water table on-site confirmed?
☐ **Monitoring wells were installed to confirm ordinary high water level** (data must be attached and the Monitoring Well Installation Plan on page 2 must be checked).
☐ **Other:**
- Where will the required 3 feet of material suitable for sustaining postmining vegetation be obtained?
Answer: (Ensure that the additional fill is bonded for on the *Reclamation Bond Spreadsheet*)

2. **Concrete Recycling** – Hardened concrete is not considered to have potential to impact water quality. As a result, concrete debris from construction or demolition projects may be imported to the site and stockpiled pending recycling or used as mined-area backfill. Similarly, sites permitted to operate a concrete plant may stockpile excess or reject product that becomes hardened on-site.

- a. Will hardened concrete be stored at the site? ☐ Yes ☒ No

If **No**, skip to [Section D-9](#).

If **Yes**, **PA Prospect Corp.** must comply with the following requirements for hardened concrete:

- i. When concrete is deposited at the site, any protruding metal must be cut off and collected. Any metal exposed during subsequent handling, transfer, crushing, or recycling must promptly be freed and collected. As a result, no protruding metal should be visible at any time. Salvaged metal must periodically be transported off-site for recycling or other lawful disposal.
- ii. Concrete must be stored in the “concrete stockpile area” shown on the Site Map.
- iii. Concrete present at the site during the final reclamation process must be **a)** removed from the site and disposed of in a lawful manner, **b)** recycled into useful products, or **c)** buried on-site under at least 3 feet of clean fill material suitable for sustaining the postmining vegetation.

Note: If asphalt is present in concrete stockpiles, the site must be permitted for asphalt recycling (refer to [Section D8-1](#) above.)

D9. REJECT FINES [ARM 17.24.219]

1. Reject fines are natural or crushed rock that is generally ¼ inch or smaller. Reject fines are usually created from screening product/material. Reject fines are typically pushed back into the pit to act as backfill before replacing the overburden and soil, or they are hauled off-site.

2. Will reject fines be created at this site?

☒ Yes ☐ No

If **No**, skip to [Section D10](#).

If **Yes**, how will reject fines be handled at this site? Check all that apply:

- a. ☐ Reject fines will be hauled off-site before accumulating to 10,000 cubic yards.
- b. ☒ Reject fines will be periodically placed back into the mine area as operations progress through the life of the permit. Reject fines will not be allowed to accumulate to more than 10,000 cubic yards.
- c. ☐ Reject fines will be stockpiled and used for reclamation at a later date.
 - i. The maximum quantity of fines to be stockpiled is _____ cubic yards*

***Note:** If more than 10,000 cubic yards of stockpiled reject fines will be located on-site, the entire stockpile must be bonded for on the *Reclamation Bond Spreadsheet* at a rate of \$1.00 per cubic yard. Ensure the *Reclamation Bond Spreadsheet* is consistent with the quantity entered in this section.
- d. ☐ Other:

D10. SOIL, OVERBURDEN, & MINE MATERIAL COMMITMENTS [MCA 82-4-434(2)(c)] & [ARM 17.24.218(1)(c-d) & 17.24.219(1)(c) & 17.24.220(2)(b)]

1. **PA Prospect Corp.** will comply with the following requirements:

- a. Prior to conducting any Opencut operations, soil and overburden must be stripped separately to the average thicknesses identified in [Section C2-4](#). (**Note:** Stripping soil may create low spots that collect water, necessitating the establishment of drainage ways, or the construction of raised roadbeds and work areas.)
- b. **PA Prospect Corp.** must strip, stockpile, save and replace all soil (and overburden if sufficient soil is unavailable) to a minimum depth of 24 inches or to another depth approved in writing by the DEQ and record the average thicknesses of soil to be replaced in [Section C2-4](#).
- c. All stripped soil and overburden must be: i) hauled directly to areas prepared for reclamation and re-soiling, or ii) promptly stockpiled and protected from erosion, comingling, contamination, compaction, and unnecessary disturbance. At the first seasonal opportunity, **PA Prospect Corp.** must shape and seed, with an approved perennial seed mix, any stockpile that will remain for 2 or more years.
- d. Designate all soil and overburden stockpiles with signage that is legible, visible, and placed so that equipment operators and inspectors may readily identify the type of stockpile being worked for the life of the stockpile.
- e. **PA Prospect Corp.** must not haul soil off-site, give it away, or sell it without written approval from the DEQ.
- f. Soil and overburden must be handled separately and **PA Prospect Corp.** will avoid mixing these materials, or handling them when wet or frozen. Overburden must be stockpiled only on areas where soil has been stripped to the required depth. Soil may be stockpiled on stripped or unstripped areas.
- g. A minimum 10-foot wide buffer zone stripped of soil and needed overburden must be maintained along the crest (edge)

of highwalls. This practice helps to ensure that soil will not be lost to mining. Highwalls are defined in D5-8.

- h. Soil, overburden, and mine material stockpiles must be kept out of drainage bottoms and off of slopes steeper than 3:1. All excavated and/or processed mine material must be: **i)** removed from the site, **ii)** buried on-site, or **iii)** left for the landowner in accordance with the *Landowner Consultation* form and [Section E7](#).
- i. Burn pile residue, building demolition debris, metal, plastic, tires, and other wastes must be disposed of off-site and in a lawful manner, unless otherwise stated in the permit.
- j. All clean fill (i.e. dirt, sand, fines, gravel, and oversize rock) that cannot, or will not, be buried during final reclamation must be removed from the permit area prior to bond or liability release request, with the exception of materials left for the landowner.

D11. ADDITIONAL IMPACTS [MCA 82-4-434(2)(m)] & [ARM 17.24.218(1)(f & k)]

1. Are there residences within 1,000 feet of the permit boundary? ☒ **Yes** ☐ **No**
2. Indicate the methods and materials that would be used to mitigate impacts of the processing equipment listed in [Section A1-10](#) from the neighboring properties.
☒ **Berms** ☒ **Buffer zones** ☒ **Dust mitigation** ☐ **Equipment enclosures** ☐ **Fences** ☐ **Paving**
☐ **Restricted Hours** ☒ **Revegetation** ☐ **Speed limits** ☒ **Vegetative screens**
☒ **Other/Additional Information:** See site map showing vegetative berms. Berms that would be atleast 6' high would outline the eastern and southern perimeter of the bonded area assuring noise and visual concerns. These berms would be planted with recommended shrubs by local weed coordinator and built to assure that they work with irrigation matters.

D12. ADDITIONAL COMMITMENTS [MCA 82-4-434(3)(g)&(h) & MCA 82-4-437] & [ARM 17.24.214 & 17.24.218(1)(l)]

1. **PA Prospect Corp.** understands that obtaining an Opencut Mining Permit does not relieve **PA Prospect Corp.'s** obligation to comply with any other applicable federal, state, county, or local statute, regulation, or ordinance. Therefore, **PA Prospect Corp.** is responsible for identifying and obtaining any other permits and approvals from other agencies required for the proposed activities (Refer to "How to Obtain and Comply with an Opencut Mining Permit" on the Opencut website). Obtaining an Opencut permit does not necessarily mean that an Operator can legally mine the site without first obtaining permits from other agencies.
2. **PA Prospect Corp.** will comply with the following requirements:
 - a. Key personnel and subcontractors involved in Opencut operations **must be informed** of the requirements of this Plan and **must be provided** a copy of this Plan. In addition, they **must be shown** each boundary marker location and informed of the importance of the markers.
 - b. Proper precautions must be taken to prevent wildfires.
 - c. Appropriate protection must be provided for identified cultural resources that could be affected by Opencut operations. If any other cultural resources are discovered, **PA Prospect Corp.** must: i) temporarily halt work, or move to another area, and ii) promptly notify the State Historic Preservation Office (406-444-7715).
 - d. By March 1st of each year, **PA Prospect Corp.** must complete and return the Annual Production Report (APR) form that the Opencut Mining Section sends early in the year. **PA Prospect Corp.** must report the requested information regarding mining conducted during the preceding calendar year. In addition, **PA Prospect Corp.** must calculate the fee for the preceding year's production (per cubic yard of material mined) and submit payment to the DEQ along with the APR.

D13. ADDITIONAL INFORMATION [MCA 82-4-432(1) & 82-4-434(2)] & [ARM 17.24.222]

1. If applicable, provide additional water protection, mining, and processing information not addressed above.
Answer: PA Prospect Corp. will not be mining into water table. Reject fines will also be placed on floor to assure a minimum of three feet of vertical seperation for groundwater.

SECTION E – RECLAMATION PLAN

E1. RECLAMATION TIMEFRAME [MCA 82-2-431(10) & (11); 82-4-434(2)(k); 82-4-434(3) & (4)] & [ARM 17.24.219(1)]

1. Reclamation must be:
 - a. Completed in accordance with this Plan and as concurrent with the Opencut operations as feasible.
 - b. Completed on an area no longer needed for Opencut operations within one year after the cessation of such operations.
 - c. Completed on an area that **PA Prospect Corp.** no longer has the right to use for Opencut operations within one year after the termination of such right.

- d. Completed by the Term of the Permit (final reclamation date) that **PA Prospect Corp.** specifies below.
- e. **PA Prospect Corp.** must specify the final reclamation date based on various business and environmental factors, including:
 - i. The estimated demand for mine materials, the expected rate of production, and accessible material reserves.
 - ii. The time required to establish productive vegetation comparable to that growing on similar undisturbed land nearby. Typical minimum timeframes for revegetation are:
 - At least 2 additional years to establish vegetation and control noxious weeds on grassland and forest areas.
 - At least 1 additional year for the first successful harvest on cropland.
- f. Final reclamation of the site is complete when the postmining land use has been achieved, including successful revegetation or crop harvest, and noxious weed control. Therefore, DEQ recommends that **PA Prospect Corp.** be sure to allow sufficient time for successful vegetative growth, thereby avoiding the need to submit an amendment application requesting only to extend the final reclamation date.
- g. **Final Reclamation Date is:** Month December, Year 2031
- h. **PA Prospect Corp.** certifies that the reclamation date chosen fits the operator's production and business needs.

Note:

- If **PA Prospect Corp.** will not be able to achieve the postmining land use by this date, an amendment application must be submitted to extend the final reclamation date. Such an application must be submitted well in advance of the reclamation date to allow time for processing and approval of the amendment.
- If the final reclamation date passes before **PA Prospect Corp.** achieves the postmining land use, the permit would no longer be valid. The operator would subsequently be required to cease all Opencut activities and enter into an agreement with the DEQ Enforcement Program to either reclaim the site to the permitted postmining land use or re-permit the site.
- The expiration or termination of a permit does not relieve **PA Prospect Corp.** from the obligation to conduct reclamation as required by the plan of operation or the liability for costs of reclamation exceeding the amount of the bond.

E2. POSTMINING LAND USES [MCA 82-4-434(1) & (2)] & [ARM 17.24.219(1)(a)]

1. The site will be reclaimed to the postmining land use(s) below. Show all postmining land uses on the Reclamation Map.

☐ **Permitted Access Road(s):** Length ____ Width ____

☐ **Internal Road(s):** Length ____ Width ____

☒ **Cropland, Rangeland and/or Pasture** (cropland requires 5:1 or flatter slopes for reclamation & Rangeland and/or Pasture require 3:1 slopes or flatter for final reclamation)

☐ **Year-round Pond:** ☐ Fishery ☐ Livestock ☐ Recreation ☐ Wildlife ☐ Other:

☐ **Seasonal Pond:** Purpose- ☐ Wetland ☐ Seasonal Wetland

☐ **Berms** ☐ **Fences** ☐ **Landowner Equipment Storage Area***

☒ **Landowner Material Stockpile Area***

☐ **Industrial/Commercial**** ☐ **Residential**** ☐ **Vegetative Screens** ☐ **Other:**

***Landowner Equipment Storage Areas & Landowner Material Stockpile Areas** must be shown on the Reclamation Map (include approximate acreage).

****Residential** and **Industrial/Commercial** land uses may require submittal of planning documents and approvals.

PA Prospect Corp. understands that all soil taken from residential or industrial/commercial areas must be kept on site for reclamation and cannot be removed or sold until the DEQ has determined the postmining land use has been met, thereby verifying the soil is not needed to reclaim the area, or other remaining areas. This verification is achieved when **PA Prospect Corp.** submits a Phase I or Phase II release request, the site is inspected, and the release request is approved.

Note: If site plans change, **PA Prospect Corp.** must submit an amendment application to update the postmining land use(s).

2. What facilities and structures will remain after reclamation of the site is completed?
 - ☒ **None** ☐ **Concrete Structures** ☐ **Gravel or Paved Surface Area** ☐ **Office** ☐ **Scale**
 - ☐ **Other:**

- i. Describe the purpose of leaving these facilities or structures intact.

Answer:

E3. PONDS AND WETLANDS [MCA 82-4-434(1) & (2)] & [ARM 17.24.219(1) & 17.24.221(5)]

1. If Section E2 above does not designate a pond, seasonal pond, or wetland as a postmining land use, skip to Section E4; otherwise, proceed to E3-2 below.

2. As a water feature would remain, complete the *Pond and Wetland Design Worksheet*, check the appropriate box on page 2, and include the worksheet with the application submittal. The *Pond and Wetland Design Worksheet* can be found here: <http://deq.mt.gov/Mining/opencut> (click on the "Forms" tab).
3. **PA Prospect Corp.** understands that all soil taken from the pond or wetland area must be kept on-site for reclamation and cannot be removed or sold until the DEQ has determined the postmining land use has been met, thereby verifying the soil is not needed to reclaim the pond or wetland area, or other remaining areas. This verification is achieved when **PA Prospect Corp.** submits a Phase I or Phase II release request, the site is inspected, and the release request is approved.
4. **PA Prospect Corp.** has consulted with DNRC and understands the requirements regarding water rights and ground water development related to reclaiming to the postmining land uses identified in E2-1. The DNRC water right flow chart can be accessed here: <http://deq.mt.gov/Mining/opencut>.
Additional Information (if applicable):

E4. SITE CLEANUP, GRADING AND RECLAMATION [ARM 17.24.219(1) & 17.24.221(5)]

1. **PA Prospect Corp.** must comply with the following requirements:
 - a. Leave reclaimed surfaces in a stable condition, graded to drain to low areas where applicable, and blended into the surrounding topography and drainageways. Note: Irregular contours are preferred for livestock and wildlife habitat; areas of unvarying slope should be minimized; and drainageways must be reclaimed similar to surrounding natural conditions.
 - b. Leave reclaimed surfaces with 5:1 or flatter slopes for hayland and cropland, 4:1 or flatter slopes for sandy surfaces, and 3:1 or flatter slopes for other areas (The DEQ may approve steeper slopes on a case by case basis).
 - c. Leave reclaimed surfaces at least 3 feet above the seasonal high water table level for dryland reclamation and at least 3 feet below the seasonal low water table level for pond reclamation (The DEQ may approve seasonal ponds for certain situations).
 - d. Retrieve and properly use, stockpile, or dispose of all refuse and spilled mine materials (e.g. chips, oversize, etc.) found in the permit area and along access roads as such materials will impair revegetation.
2. Indicate the grade of the steepest slope that would remain after the site is reclaimed.
☐3:1 ☐4:1 ☒5:1 ☐6:1 ☐Other:
 Note: This reclamation slope ratio must be used on the *Reclamation Bond Spreadsheet*.
 If a slope of 3:1 or flatter was checked, skip to E4-3.
 If the **Other** box was checked above and **PA Prospect Corp.** intends to have slopes steeper than 3:1, address the following:
PA Prospect Corp. must provide a slope stability study prepared by a professional engineer licensed in accordance with Title 37, chapter 67, part 3, MCA, or a geologist with five years of post-graduate academic or professional work experience in the field of soil or rock mechanics, documenting that the slopes will remain stable [ARM 17.24.219 (c)].
☐Slope Stability Analysis Attached (check the appropriate box on page 2)
☐Further Description (if applicable):
3. Will the site be graded to blend in with surrounding topography? ☒Yes ☐No
 If **No**, explain in detail how the site will be graded:
4. Would a water collection area remain for final reclamation?
☒Yes ☐No
 - a. If **Yes**, where will precipitation/stormwater/snow-melt, etc. concentrate or drain to in the reclaimed depression?
 - i. ☐Seasonal or year-round wetland or pond (applicable postmining land use must be checked in E2).
 - ii. ☒Runoff collection area(s) in bottom of depression graded specifically to collect any runoff, thereby not impacting other areas of the site with ponding or pooling of water.
 - Approximate location of water collection area(s) must be shown on the **Reclamation Map**
 - ☒Water collection area is $\leq \frac{1}{2}$ acre in size;
 - ☐Water collection area is $> \frac{1}{2}$ and ≤ 1 acre in size – Explain why water collection area needs to be greater than $\frac{1}{2}$ acre in size
 - iii. ☐Other-Describe:
 - b. If **No**, describe where stormwater will concentrate or drain to, i.e. water will flow to the (check all that apply):
 - i. ☐Water would infiltrate into the ground ☐East ☐North ☐Northeast ☐Northwest ☐South
☐Southeast ☐Southwest ☐West
☐Further Description:
 - ii. Water will flow off-site via:
☐Reclaimed drainages, swales, etc. within the permitted boundary ☐Reclaimed slopes
☐Other-Describe:

Note: ARM 17.24.221(5) requires that the Reclamation Map contain arrows depicting the anticipated direction of water flow across the reclaimed site.

E5. SOIL AND OVERBURDEN SURFACE PREPARATION AND REPLACEMENT

[ARM 17.24.202(14) & 17.24.219(1)(g)]

1. Compacted soil and overburden must be tilled to allow air and water movement, root penetration, and the subsurface drainage necessary for plant growth. Will **PA Prospect Corp.** alleviate compaction by deep-tilling or ripping all compacted surfaces to a depth of at least 12 inches before re-soiling? ☒Yes ☐No

Note: The DEQ recommends the following:

- a. Ripping or deep tilling is not required for non-compactable materials such as sand and gravel.
- b. Ripper shanks should be spaced about equal to the ripping depth.
- c. Rip along contours where possible and when soil and overburden are dry enough to shatter.
- d. Protect ripped areas from recompaction.

If **No**, explain in detail how overburden and soil compaction would be alleviated, or explain why relieving compaction would not be necessary:

2. Indicate the methods to be used to relieve soil compaction and prepare the seedbed.

☐Chiseling ☒Disking ☐Harrowing ☐Packing ☐Other:

3. **PA Prospect Corp.** will limit the presence of large rocks that are not characteristic of the soil prior to disturbance and may inhibit successful revegetation and agricultural production. Method(s) that will be used include:

☒Blading Off and Removal of Large Rocks ☐Rock Picker ☐Rolling ☐Screening ☐Hand Picking ☐Other:

E6. REVEGETATION [MCA 82-4-431(2)(c) & 82-4-434(2)] & [ARM 17.24.218(1)(j) & 17.24.219(1)(h)]

1. **PA Prospect Corp.** must comply with the following requirements:

- a. Establish vegetation capable of sustaining the designated postmining land use(s).
- b. Use certified weed-free seed and comply with local weed district requirements.
- c. Seed during the late fall or early spring seeding season (unless otherwise approved) and seed along contours for drill seeding.
- d. Ensure that areas seeded or planted to perennial species can be, and are, appropriately protected and managed from the time of seeding or planting through two growing seasons, or until site stabilization and revegetation are achieved, whichever is longer.
- e. Revegetation success on non-cropland areas is achieved when vegetation capable of sustaining the designated postmining land use has been established. Revegetation success on cropland areas is achieved when a crop has been harvested from the entire area and the yield is comparable to those of crops grown on similar undisturbed sites under similar growing conditions.
- f. Except for those postmining land uses that do not require vegetation, each surface area of the site that will be disturbed will be revegetated when its use for the Opencut operation is no longer needed.
- g. **PA Prospect Corp.** must attach the Opencut Mining Section's *Weed Board Notification of Opencut Operation* form that **PA Prospect Corp.** has submitted to the weed board in the county or counties in which the proposed operation is located and check the appropriate box on page 1.

2. Will **PA Prospect Corp.** apply fertilizer, compost, mulch, or other soil amendments? ☐Yes ☒No

3. The primary method of seeding will be: ☒Drilling* ☐Broadcasting**

*Sagebrush seed cannot be drill seeded and must be broadcast at the rates identified in the sagebrush seed mix. Grass and forb seeds in a sagebrush seed mix can be drill seeded.

**Broadcast seeding must be at double the rate used for drilling (i.e. 24 lbs/acre or more).

4. The DEQ's *Seed Mix Guideline* is available on the Opencut Mining Section's website at <http://deq.mt.gov/Mining/opencut> (click on the "Forms" tab).

Will seed mixes described in the Seed Mix Guideline be used for final reclamation? ☒Yes ☐No

If **No**, complete the table below with a custom seed mix.

If **Yes**, check the appropriate box on page 2, attach a copy of the guideline, and indicate below which seed mix(es) would be used.

☒Native Grazing/Pasture ☐Non-Native Grazing/Pasture

☐Native Rangeland (for moist/riparian regions)

☐ **Native Rangeland** (for arid regions) ☐ **Wetland Seed Mix** (for pond edges or wetland areas)

OR

☐ **Cropland seed mix designated by Landowner at time of reclamation**

OR

Recommended Seed Mixes for Sage Grouse Habitat

If the site is in general, core, or interconnectivity sage grouse habitat, **PA Prospect Corp.** must choose the appropriate seed mix below, unless the landowner has requested an alternate seed mix (refer to the Landowner Consultation form).

☐ **Northern Region** ☐ **Central & Southeastern Regions** ☐ **Southwestern and South Central Regions**

In the table below, describe the seed mix species and rates of seeding (pure live seed per acre) that will be used:

SEED TYPE	SEED RATE
TOTAL SEEDING RATE	0.0 pounds pure live seed/acre

Additional Seeding Information (if applicable):

5. Indicate the measures to be used to manage and protect the site until reclamation vegetation is established.
- ☒ **Noxious Weed Control** (mandatory) ☐ **Fencing** (include cost of fencing on the *Reclamation Bond Spreadsheet*)
- ☐ **No Grazing** (**PA Prospect Corp.** should secure written commitment from landowner)
- ☐ **Other:**
6. Indicate the method(s) or types of erosion control Best Management Practices (BMPs) that would be used at this site during reclamation to inhibit erosion and promote plant growth. **PA Prospect Corp.** must maintain the below checked erosion control BMP's during reclamation to protect water quality and prevent sediment from leaving the site (as needed):
- ☒ **Equipment Tracking** (orientated to trap moisture and break water flow) ☐ **Erosion Control Blankets** ☐ **Mulch**
- ☐ **Seeding/Harrowing Along Contour** ☒ **Slopes 5:1 or Flatter** ☐ **Straw Bales**
- ☒ **Vegetated Buffer Strip** ☐ **Wattles** ☐ **Other:**

E7. MATERIAL REMAINING FOR LANDOWNER [ARM 17.24.203(5); 17.24.206; 17.24.219(1)(b); & 17.24.221(5)(c)]

1. Does Question B of the *Landowner Consultation* form indicate that mine material will remain at the conclusion of Opencut operations; or, if the landowner is the Operator, will mine material remain at the conclusion of Opencut operations?
- ☒ **Yes** ☐ **No**
- If **No**, skip to **Section E8**.
2. The following requirements apply to leaving mine material for the landowner at the conclusion of Opencut operations:
- Landowner mine materials must be left in a single location that will be accessible by road. If the landowner stockpile is not adjacent to an existing public road, the road to the stockpile must be shown on the Reclamation Map.
 - Landowner mine material stockpiles must be segregated into piles of similar types and grades.
 - Landowner mine material stockpiles must be located in the area designated on the Reclamation Map.
 - PA Prospect Corp.** must leave the quantity of soil necessary to reclaim the stockpile area within 100 feet of the mine material stockpile to remain for the landowner.
 - Thickness of soil required to be stripped from the site is **6 inches * .5 acres** (estimated number of acres that will be occupied by the soil stockpile area) = **403 cubic yards of soil that must remain for the landowner material stockpile area.**

E8. ADDITIONAL INFORMATION [MCA 82-4-432(1) & 82-4-434(2)] & [ARM 17.24.222]

1. If applicable, provide additional reclamation information not addressed above.
- Answer: Well ID #s have been eliminated from site/area maps for clarity. Well ID#s can be found on the WRA**

SECTION F – RECLAMATION BOND CALCULATION [MCA 82-4-433] & [ARM 17.24.203 & ARM 17.24.220]

Government Operators: Skip to **Section G**.

Non-Government Operators:

1. Attach a proposed *Reclamation Bond Spreadsheet* and check the appropriate box on page 1.
2. The purpose of the *Reclamation Bond Spreadsheet* is to provide a reasonable estimate of the cost for the DEQ to reclaim the site in accordance with the *Opencut Mining Plan of Operation & Application* at the time of the site's maximum permitted disturbance. As a result, the estimated costs include equipment mobilization and project administration. The DEQ will review the proposed bond calculation and make a final determination as to the required bond amount.
3. Bond is not required to be posted for government operators or for acreage permitted as Non-Bonded until the acreage is needed for Opencut operations. Prior to commencing any such operations, **PA Prospect Corp.** must submit a *Request to Modify Bonded Acreage* form, supporting documents, and post additional bond (if appropriate) on the undisturbed acreage. No Opencut activities, including equipment parking, can begin on non-bonded acreage until the *Request to Modify Bonded Acreage* form, supporting documents, and bond are approved in writing by the DEQ.
4. **PA Prospect Corp.** understands that the DEQ may adjust the bond yearly.
5. Provide additional information relevant to the *Reclamation Bond Spreadsheet* if applicable:

None

Proceed to Section G – Certification and ensure it is fully completed

SECTION G – CERTIFICATION [MCA 82-4-432(1)(e)] & [ARM 17.24.222(3)]

The person signing below represents that (check one box):

☒ I am an officer or an employee of **PA Prospect Corp.** and I am duly authorized to bind the Operator identified on page 1 of the *Opencut Mining Plan of Operations & Application* as a corporation, limited partnership, limited liability company, or other corporate entity in good standing and authorized to do business in Montana, and in this capacity I acknowledge and certify that:

Or

☐ I am the Operator identified on page 1 of the *Opencut Mining Plan of Operation & Application* and I acknowledge and certify that:

- 1) The attachments that follow my signature are incorporated into and enforceable as part of the *Opencut Mining Plan of Operation & Application*;
- 2) **PA Prospect Corp.** has the legal right to conduct Opencut operations in the permit area described in the *Opencut Mining Plan of Operation & Application*;
- 3) **PA Prospect Corp.** consents to and acknowledges that the DEQ and its representatives may access the site to inspect the permit area at any reasonable time, and that while the DEQ attempts to provide reasonable notice of an inspection to **PA Prospect Corp.** when practicable under the circumstances, inspections may be conducted without prior notice as necessary to determine whether Opencut operations are being conducted in compliance with the permit, Act, and rules [82-4-422(1)(d) and 425, MCA] & [ARM 17-24-206(3)].
- 4) I have read and understand all the information, representations, terms, requirements, and conditions set forth in *Opencut Mining Plan of Operation & Application*;
- 5) The information, representations, and statements provided or acknowledged in the *Opencut Mining Plan of Operation & Application* are, to the best of my knowledge and belief, true and correct; and,
- 6) **PA Prospect Corp.** agrees to abide by and comply with the Opencut Mining Act, Montana Code Annotated sections 82-4-401 through 82-4-446, and Administrative Rules of Montana 17.24.201 through 17.24.226, and all representations, terms, requirements, and conditions set forth in the *Opencut Mining Plan of Operation & Application* and the *Opencut Mining Permit* approved by the DEQ, and communicate the same to any contractor or supervisor who directs Opencut operations under authority of the *Opencut Mining Permit*.

By:

Signature

Civil Engineer

Title

Charlie Johnston

Legibly print or type name

05-07-2021

Date

Hamilton

063

14N 21W 25A

RECEIVED

Missoula

Form No. 603 (R 6-87)

JUL 18 1989

File No.

WELL LOG REPORT

MONTANA D.N.R.C.

MISSOULA FIELD OFFICE

State law requires that this form be filed by the water well owner within 30 days after completion of

062820

1. WELL OWNER Name <u>WARREN BLOCK</u>			7. WELL CONSTRUCTION AND COMPLETION						
2. CURRENT MAILING ADDRESS <u>5750 Lavoie</u> <u>Missoula, MT 59802</u>			Size of drilled hole <u>6"</u>	Size and PSI Rating of casing <u>6" ID 1580 PSI</u>	From (feet) <u>+1 1/2</u>	To (feet) <u>126' 9"</u>	Perforations _____ and/or		
3. WELL LOCATION County <u>Missoula</u> Township <u>14N</u> N/S Range <u>21 W</u> E/W <u>NE</u> 1/4 1/4 Section <u>25</u> Lot _____ Block _____ Subdivision _____ Tract Number <u>Cert of Survey 2281</u>							Screen Kind Size From (feet) To (feet)		
4. PROPOSED USE Domestic <input checked="" type="checkbox"/> Stock <input type="checkbox"/> Irrigation <input type="checkbox"/> Other <input type="checkbox"/> specify _____			Was casing left open end? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No						
5. DRILLING METHOD cable, _____ air rotary, _____ <input checked="" type="checkbox"/> forward rotary, _____ reverse rotary, _____ jetted, _____ other (specify) <u>Driven</u>			Was a packer or seal used? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No						
6. WELL LOG Depth (ft.) From To Formation			If so, what material _____						
0 17 Clay, Sand & Gravel			Was the well gravel packed? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No						
17 23 Sand, Gravel & Water			To what depth was the well grouted? <u>20</u> ft						
23 56 Sand & Water			Material used in grouting <u>Bentonite surface seal</u>						
56 67 Clay			Well head completion: Pitless adapter _____ Yes <input type="checkbox"/> No <input type="checkbox"/>						
67 94 Sand & Water			Top casing 18 in. or greater above grade <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No						
94 99 Clay			8. WELL TEST DATA						
99 122 Sand & Water			The pump test information request in this section is required for all wells. All depth measurements shall be from the top of the well casing unless otherwise specified.						
122 125 Clay			All wells under 100 gpm must be tested for a minimum of one hour and provide the following information:						
125 126 1/2 Sand, Gravel & Water			a) Air <input checked="" type="checkbox"/> Pump _____ Bailer _____						
			b) Static water level immediately before testing <u>16 1/2</u> ft. If flowing; closed-in pressure _____ psi _____ gpm						
			Controlled by: _____ valve, _____ reducers, _____ other, (specify) _____						
			c) Depth at which pump is set for test <u>60</u>						
			d) The pumping rate and means of discharge (i.e., bailing, airlift, pumping) <u>100+*</u> gpm						
			e) Maximum drawdown during the test <u>43 1/2</u> ft						
			f) Duration of test: Pumping time <u>1</u> hrs Recovery time _____ hrs						
			g) Recovery water level <u>16 1/2</u> ft Amount of time after pumping recovery level water data was taken _____ hrs						
			Wells intended to yield 100 gpm or more shall be tested for a period of 8 hours or more. The test shall follow the development of the well, and shall be conducted continuously at a constant discharge at least as great as the intended appropriation. In addition to the above information, water level data shall be collected and recorded on the Department's "Aquifer Test Data" form included in each packet of well logs.						
			NOTE: All wells shall be equipped with an access port 1/2 inch minimum or a pressure gauge that will indicate the shut-in pressure of a flowing well. Removable caps are acceptable as access ports.						
			9. WAS WELL PLUGGED OR ABANDONED? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> If yes, how? _____						
			10. DATE COMPLETED <u>July 14, 1989</u>						
			11. DRILLER/CONTRACTOR'S CERTIFICATION This well was drilled under my jurisdiction and this report is true to the best of my knowledge. <u>July 17, 1989</u> Date <u>CAMP WELL DRILLING & PUMP SUPPLY</u> Firm Name <u>1522 S. 14th W., Missoula, MT 59801</u> Address <u>Phil Bakke</u> Signature License No. <u>7</u>						
			ATTACH ADDITIONAL SHEETS IF NECESSARY						

MONTANA DEPARTMENT OF NATURAL RESOURCES & CONSERVATION

1520 EAST SIXTH AVENUE

HELENA, MONTANA 59620-2301

444-6610

DNRC

RCVD FTS 03/11/20

DEPARTMENT — BUREAU COPY

M: 71259

State law requires that this form be filed by the water well driller within 60 days after completion of

029556

[illegible]

MONTANA DEPARTMENT OF NATURAL RESOURCES & CONSERVATION

1520 EAST SIXTH AVENUE

HELENA, MONTANA 59620-2301

444-6610

DNRC

RCVD FTS 03/11/20

DEPARTMENT — BUREAU COPY

M: 71272

Hamilton

14N 21W 25 ACDD

Missoula

084952

WM. F. OSBORNE, Owner

MUNICIPAL
INDUSTRIAL
DOMESTIC
IRRIGATION

WELLS

LICENSED, BONDED AND INSURED

LIBERTY DRILLING AND PUMP COMPANY

3850 HIGHWAY 93 SOUTH
PHONE (406) 752-2809
Kalispell, Montana 59901

August 26, 1991

Stone Container Corporation
Mullan Road
Missoula, Montana 59806

FORMATION LOG - MONITORING WELL #1

- 0 - 2 Cobblestones mixed in brown topsoil.
- 2 - 12 Sand, gravel and cobblestones mixed in brown silt.
- 12 - 17 Sand, gravel and scattered cobblestones mixed in brown silt.
- 17 - 22 Coarse sand and gravel mixed in tan silt.
- 22 - 28 Coarse sand and scattered gravel mixed in dark brown silt.
- 28 - 30 Scattered sand and gravel mixed in brown silt - chunks and balls of pinkish-brown clay.

PD

Coordinates: 15797.27 North
50029.51 East

Facility/Project Name
Stone Container Corp.

Facility License

Type of Well: Water Table Observation Well ☐
Piezometer ☐

Distance Well Is From Water/Source Boundary
3000 ft

Is Well a Point of Standards Application?
☐ Yes ☐ No

Local Grid Location of Well
N ☐ S ☐ E ☐ W ☐

Grid Origin Location
Lat. _____ Long. _____ or
St. Plane _____ ft N _____ ft S

Section Location of Waste/Source
☐ E ☐ W ☐

Location of Well Relative to Waste/Source
u ☒ Upgradient s ☐ Sidegradient
d ☐ Downgradient n ☐ Not Known

Well Name
SMW #1
MT Unique Well Number _____ CHES Well Name _____

Date Well Installed 08/20/91
mm dd yy

Well Installed By: (Person's Name and Firm)
William S. Beyer

Liberty Drilling & Pump Co.

A. Protective pipe, top elevation 3064.51 ft. MSL
B. Well casing, top elevation 3064.42 ft. MSL
C. Land Surface elevation 3060.8 ft. MSL
D. Surface seal, bottom _____ ft. MSL or 6 ft.

12. USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ GW ☐ SP ☐
SM ☐ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☐ Sand & gravel

13. Sieve analysis attached? ☐ Yes ☒ No

14. Drilling method used: Rotary ☐
Hollow Stem Auger ☐
Cable Tool Other ☒

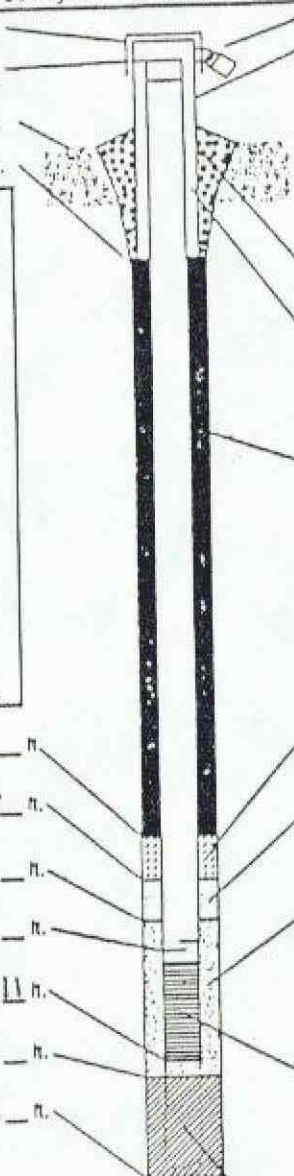
15. Drilling fluid used: Water ☒ Air ☐
Drilling Mud ☐ None ☐

16. Drilling additives used? ☐ Yes ☒ No

Describe _____

17. Source of water:
Stone Service

E. Bentonite seal, top _____ ft. MSL or 6 ft.
F. Fine sand, top _____ ft. MSL or _____ ft.
G. Filter pack, top _____ ft. MSL or 11 ft.
H. Screen joint, top _____ ft. MSL or 14 ft.
I. Well bottom _____ ft. MSL or 29.11 ft.
J. Filter pack, bottom _____ ft. MSL or 30 ft.
K. Borehole bottom _____ ft. MSL or 30 ft.
L. Borehole, diameter 8.5/8 in.
M. O.D. well casing 4.42 in.
N. I.D. well casing 4 in.



1. Cap and lock? ☒ Yes ☐ No
2. Protective cover pipe:
a. Inside diameter: 6 in.
b. Length: 9.6 ft.
c. Material: Steel ☒
Other ☐
d. Additional protection? ☐ Yes ☐ No
If yes, describe: _____

3. Surface seal: Bentonite ☐
Concrete ☒
Other ☐
4. Material between well casing and protective pipe: Bentonite ☒
Annular space seal ☐
Other ☐

5. Annular space seal: a. Granular bentonite ☒
b. _____ Lbs/gal mud weight ... Bentonite-sand slurry ☐
c. _____ Lbs/gal mud weight ... Bentonite slurry ☐
d. _____ % bentonite ... Bentonite cement grout ☐
e. 1314 Ft³ volume added for any of the above
f. How installed: Tremie ☐
Tremie pumped ☐
Gravity ☒

6. Bentonite seal: a. Bentonite granules ☒
b. ☐ 1/4 in. ☒ 3/8 in. ☐ 1/2 in. Bentonite pellets ☐
c. _____ Other ☐

7. Fine sand material: Manufacturer, product name & mesh size
a. _____
b. Volume added _____ ft³

8. Filter pack material: Manufacturer, product name & mesh size
a. Colorado Silica Sand #8-12
b. Volume added 6 ft³

9. Well casing: Flush threaded PVC schedule 40 ☒
Flush threaded PVC schedule 80 ☐
Other ☐

10. Screen material: 4" PVC
a. Screen type: Factory cut ☒
Continuous slot ☐
Other ☐

b. Manufacturer: _____
c. Slot size: 0.20 in.
d. Slotted length: 15.1 ft.

10. Screen material: None ☒
Other ☐

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature William S. Beyer

Firm Liberty Drilling & Pump Company

MWCD22

Facility/Project Name Stone Container Corp.		County Name Missoula		Well Name smw #1	
Facility License Number _____		County Code _____		MT Unique Well Number _____	
_____		_____		OHES Well Number _____	

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<p>Well developed by: (Person's Name and Firm)</p> <p>Name: <u>William S. Beyer</u></p> <p>Firm: <u>Liberty Drilling & Pump Co.</u></p> <p><u>3850 Hwy 93 South, Kalispell, MT 59901</u></p>	<p>I hereby certify that the above information is true and correct to the best of my knowledge</p> <p>Signature: <u>William S. Beyer</u></p> <p>Print Initials: <u>W S B</u></p> <p>Firm: <u>Liberty Drilling & Pump Co.</u></p>
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Note: Shaded areas are for OHES use only. See instructions for more information including a list of county codes.

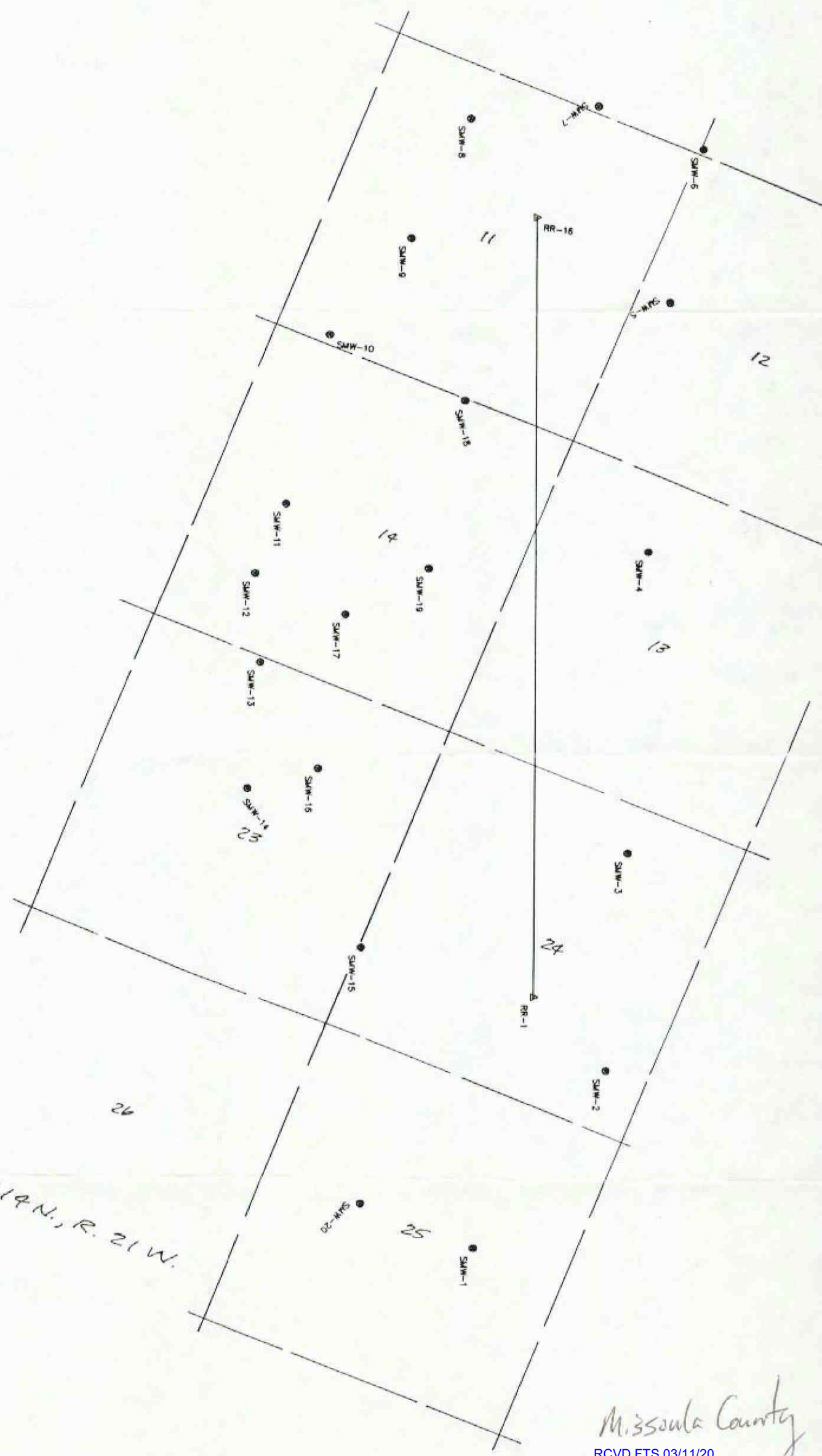
~~James R. Weatherly, P.E.~~
President

JRW:kw

Encl.

9201020

T. 19 N., R. 21 W.



Missoula County

RCVD FTS 03/11/20

Hamilton

14N 21W 25 BDCC

Missoula

WM. F. OSBORNE, Owner

LIBERTY DRILLING AND PUMP COMPANY

MUNICIPAL
INDUSTRIAL
DOMESTIC
IRRIGATION

WELLS

LICENSED, BONDED AND INSURED

084953

3850 HIGHWAY 93 SOUTH
PHONE (406) 752-2809
Kallispell, Montana 59901

August 27, 1991

Stone Container Corporation
Mullan Road
Missoula, Montana 59806

FORMATION LOG - MONITORING WELL #20

- 0 - 2 Gravel and cobblestones mixed in topsoil.
- 2 - 9 Coarse gravel, scattered cobblestones and sand mixed in light brown silt.
- 9 - 21 Small gravel, sand and cobblestones mixed in light brown silt - traces of clay.
- 21 - 23 Scattered gravel mixed in sand with chunks and balls of pink clay.
- 23 - 28 Scattered gravel and sand mixed in brown silt.

PD

Facility/Project Name <u>Stone Container Corp</u>		County Name <u>Missoula</u>		Well Name <u>SMW #20</u>	
Facility License Number _____		County Code _____		MT Unique Well Number _____	
				DHES Well Number _____	

<p>1. Can this well be purged dry? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p> <p>2. Well development method</p> <table style="width:100%;"> <tr><td>surged with bailer and bailed</td><td><input type="checkbox"/></td></tr> <tr><td>surged with bailer and pumped</td><td><input checked="" type="checkbox"/></td></tr> <tr><td>surged with block and bailed</td><td><input type="checkbox"/></td></tr> <tr><td>surged with block and pumped</td><td><input type="checkbox"/></td></tr> <tr><td>surged with block, bailed and pumped</td><td><input type="checkbox"/></td></tr> <tr><td>compressed air</td><td><input type="checkbox"/></td></tr> <tr><td>bailed only</td><td><input type="checkbox"/></td></tr> <tr><td>pumped only</td><td><input type="checkbox"/></td></tr> <tr><td>pumped slowly</td><td><input type="checkbox"/></td></tr> <tr><td>Other _____</td><td><input type="checkbox"/></td></tr> </table> <p>3. Time spent developing well <u>90</u> min.</p> <p>4. Depth of well (from top of casing) <u>31.10</u> ft</p> <p>5. Inside diameter of well <u>4</u> in.</p> <p>6. Volume of water in filter pack and well casing <u>50</u> gal.</p> <p>7. Volume of water removed from well <u>1200</u> gal.</p> <p>8. Volume of water added (if any) _____ gal.</p> <p>9. Source of water added _____</p> <p>10. Analysis performed on water added? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No (If yes, attach results)</p>	surged with bailer and bailed	<input type="checkbox"/>	surged with bailer and pumped	<input checked="" type="checkbox"/>	surged with block and bailed	<input type="checkbox"/>	surged with block and pumped	<input type="checkbox"/>	surged with block, bailed and pumped	<input type="checkbox"/>	compressed air	<input type="checkbox"/>	bailed only	<input type="checkbox"/>	pumped only	<input type="checkbox"/>	pumped slowly	<input type="checkbox"/>	Other _____	<input type="checkbox"/>	<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:30%;"></th> <th style="width:35%;">Before Development</th> <th style="width:35%;">After Development</th> </tr> </thead> <tbody> <tr> <td>11. Depth to Water (from top of well casing)</td> <td>a. <u>17.11</u> ft</td> <td><u>17.11</u> ft</td> </tr> <tr> <td>Date</td> <td>b. <u>08/21/91</u> mm dd yy</td> <td><u>08/21/91</u> mm dd yy</td> </tr> <tr> <td>Time</td> <td>c. <u>2:00</u> <input type="checkbox"/> a.m. <input checked="" type="checkbox"/> p.m.</td> <td><u>4:00</u> <input type="checkbox"/> a.m. <input checked="" type="checkbox"/> p.m.</td> </tr> <tr> <td>12. Sediment in well bottom</td> <td><u>1.0</u> inches</td> <td><u>2.0</u> inches</td> </tr> <tr> <td>13. Water clarity</td> <td>Clear <input type="checkbox"/> Turbid <input checked="" type="checkbox"/> (Describe) <u>Brown-Silty</u></td> <td>Clear <input checked="" type="checkbox"/> Turbid <input type="checkbox"/> (Describe) <u>Crystal Clear</u></td> </tr> <tr> <td colspan="3">Fill in if drilling fluids were used and well is at solid waste facility:</td> </tr> <tr> <td>14. Total suspended solids</td> <td>_____ mg/l</td> <td>_____ mg/l</td> </tr> <tr> <td>15. COD</td> <td>_____ mg/l</td> <td>_____ mg/l</td> </tr> </tbody> </table>		Before Development	After Development	11. Depth to Water (from top of well casing)	a. <u>17.11</u> ft	<u>17.11</u> ft	Date	b. <u>08/21/91</u> mm dd yy	<u>08/21/91</u> mm dd yy	Time	c. <u>2:00</u> <input type="checkbox"/> a.m. <input checked="" type="checkbox"/> p.m.	<u>4:00</u> <input type="checkbox"/> a.m. <input checked="" type="checkbox"/> p.m.	12. Sediment in well bottom	<u>1.0</u> inches	<u>2.0</u> inches	13. Water clarity	Clear <input type="checkbox"/> Turbid <input checked="" type="checkbox"/> (Describe) <u>Brown-Silty</u>	Clear <input checked="" type="checkbox"/> Turbid <input type="checkbox"/> (Describe) <u>Crystal Clear</u>	Fill in if drilling fluids were used and well is at solid waste facility:			14. Total suspended solids	_____ mg/l	_____ mg/l	15. COD	_____ mg/l	_____ mg/l
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Note: Shaded areas are for DHES use only. See instructions for more information including a list of county codes.

WELL LOG REPORT

File No. 6387

116686

State law requires that the Bureau's copy be filed by the water well driller within 60 days after completion of the well.

1. WELL OWNER Name <u>Brett Butler</u>		f) Duration of test: Pumping time <u>1</u> hrs. g) Recovery time <u>45</u> hrs. Min. <u>1 1/2</u> h) Recovery water level <u>20</u> ft. at <u>1 1/2</u> hrs. after pumping stopped.													
2. CURRENT MAILING ADDRESS <u>4650 Goodan Ln. Missoula, Mt. 59802</u>		Wells intended to yield 100 gpm or more shall be tested for a period of 8 hours or more. The test shall follow the development of the well, and shall be conducted continuously at a constant discharge at least as great as the intended appropriation. In addition to the above information, water level data shall be collected and recorded on the Department's "Aquifer Test Data" form. NOTE: All wells shall be equipped with an access port 1/2 inch minimum or a pressure gauge that will indicate the shut-in pressure of a flowing well. Removable caps are acceptable as access ports.													
3. WELL LOCATION Plat <u>J</u> 1/4 <u>SE</u> 1/4 <u>NE</u> 1/4 Section <u>25</u> Township <u>14n</u> N/S Range <u>21w</u> E/W County <u>Msl</u> Gov'n't Lot _____, or Lot _____, Block _____ Subdivision Name _____ Tract Number _____															
4. PROPOSED USE: Domestic <input checked="" type="checkbox"/> Stock <input type="checkbox"/> Irrigation <input type="checkbox"/> Other <input type="checkbox"/> specify _____		11. WAS WELL PLUGGED OR ABANDONED? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> If yes, how? _____													
5. TYPE OF WORK: New well <input checked="" type="checkbox"/> Method: Dug <input type="checkbox"/> Bored <input type="checkbox"/> Deepened <input type="checkbox"/> Cable <input type="checkbox"/> Driven <input checked="" type="checkbox"/> Reconditioned <input type="checkbox"/> Rotary <input checked="" type="checkbox"/> Jetted <input type="checkbox"/>		12. WELL LOG Depth (ft.) From To Formation <u>PD</u> <table border="1"><tr><td>0</td><td>2</td><td>soil, gravel</td></tr><tr><td>2</td><td>33</td><td>sand, gravel</td></tr><tr><td>33</td><td>100</td><td>sand, clay</td></tr><tr><td>100</td><td>110</td><td>gravel</td></tr></table>		0	2	soil, gravel	2	33	sand, gravel	33	100	sand, clay	100	110	gravel
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6. DIMENSIONS: Diameter of Hole Dia. _____ in. from _____ ft. to _____ ft. Dia. _____ in. from _____ ft. to _____ ft. Dia. _____ in. from _____ ft. to _____ ft.															
7. CONSTRUCTION DETAILS: Casing: Steel Dia. <u>6"</u> from <u>+2</u> ft. to <u>110</u> ft. Threaded <input type="checkbox"/> Welded <input checked="" type="checkbox"/> Dia. _____ from _____ ft. to _____ ft. Type <u>A53B</u> Wall Thickness <u>.250</u> Casing: Plastic Dia. _____ from _____ ft. to _____ ft. Weight _____ Dia. _____ from _____ ft. to _____ ft. PERFORATIONS: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Type of perforator used _____ Size of perforations _____ in. by _____ in. _____ perforations from _____ ft. to _____ ft. _____ perforations from _____ ft. to _____ ft. _____ perforations from _____ ft. to _____ ft. SCREENS: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Manufacturer's Name _____ Type _____ Model No. _____ Dia. _____ Slot size _____ from _____ ft. to _____ ft. Dia. _____ Slot size _____ from _____ ft. to _____ ft. GRAVEL PACKED: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Size of gravel _____ Gravel placed from _____ ft. to _____ ft. GROUTED: To what depth? _____ ft. Material used in grouting <u>Bentonite. Sealed as required by rule #36-21-654.</u>															
8. WELL HEAD COMPLETION: Pitless Adapter <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		ATTACH ADDITIONAL SHEETS IF NECESSARY													
9. PUMP (if installed) Manufacturer's name _____ Type _____ Model No. _____ HP. _____		13. YELLOWSTONE CLOSURE AREA: WATER TEMPERATURE													
10. WELL TEST DATA The information requested in this section is required for all wells. All depth measurements shall be from the top of the well casing. All wells under 100 gpm must be tested for a minimum of one hour and provide the following information: a) Air <input checked="" type="checkbox"/> Pump _____ Bailer _____ b) Static water level immediately before testing <u>15</u> ft. If flowing; closed-in pressure _____ psi. _____ gpm. Flow controlled by: _____ valve, _____ reducers, _____ other, (specify) _____ c) Depth at which pump is set for test <u>30</u> d) The pumping rate: _____ gpm. e) Pumping water level _____ ft. at _____ hrs. after pumping began.		14. DATE COMPLETED <u>3-18-96</u> 15. DRILLER/CONTRACTOR'S CERTIFICATION This well was drilled under my jurisdiction and this report is true to the best of my knowledge. <u>3-22-96</u> Date <u>Jerome's Drilling Co; Inc.</u> Firm Name <u>P.O. Box 4845, Missoula, MT 59806</u> Address <u>[Signature]</u> 249 Signature License No.													

MONTANA DEPARTMENT OF NATURAL RESOURCES & CONSERVATION
1520 EAST SIXTH AVENUE P.O. BOX 202301 HELENA, MONTANA 59620 - 2301 444-6610

DNRC

14N 21W 25 DBA A

128180

Form No. 603 (R 2-89)

WELL LOG REPORT

File No. _____

State law requires that the Bureau's copy be filed by the water well driller within 60 days after completion of the well.

1. WELL OWNER Name <u>Magnolia Estates Well 1</u>	f) Duration of test: Pumping time <u>10 3/4</u> hrs. g) Recovery time <u>35 min</u> hrs. h) Recovery water level <u>21</u> ft. at <u>3 min</u> hrs. after pumping stopped. Wells intended to yield 100 gpm or more shall be tested for a period of 8 hours or more. The test shall follow the development of the well, and shall be conducted continuously at a constant discharge at least as great as the intended appropriation. In addition to the above information, water level data shall be collected and recorded on the Department's "Aquifer Test Data" form. NOTE: All wells shall be equipped with an access port 1/2 inch minimum or a pressure gauge that will indicate the shut-in pressure of a flowing well. Removable caps are acceptable as access ports.																																																					
2. CURRENT MAILING ADDRESS <u>7501 Gardner Drive</u> <u>Missoula, MT. 59802</u>	11. WAS WELL PLUGGED OR ABANDONED? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> If yes, how? _____																																																					
3. WELL LOCATION <u>NE 1/4 NW 1/4 SE 1/4</u> Section <u>25</u> <u>14</u> Township <u>N 18</u> Range <u>20</u> <u>EW</u> County <u>msla.</u> Govn't Lot _____ or Lot _____ Block _____ Subdivision Name _____ Tract Number _____																																																						
4. PROPOSED USE: Domestic <input checked="" type="checkbox"/> Stock <input type="checkbox"/> Irrigation <input type="checkbox"/> Other <input type="checkbox"/> specify <u>Public Water Supply #1</u>																																																						
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6. DIMENSIONS: Diameter of Hole Dia. <u>8 1/4</u> in. from <u>+20</u> ft. to <u>-148</u> ft. Dia. _____ in. from _____ ft. to _____ ft. Dia. _____ in. from _____ ft. to _____ ft.	12. WELL LOG <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="2">Depth (ft.)</th> <th rowspan="2">Formation</th> </tr> <tr> <th>From</th> <th>To</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>2 1/2</td> <td>Top Soil</td> </tr> <tr> <td>2 1/2</td> <td>7</td> <td>Sands & Small Gravels</td> </tr> <tr> <td>7</td> <td>31</td> <td>Gravels & Cobbles</td> </tr> <tr> <td>31</td> <td>56</td> <td>Sand, Fine Brown</td> </tr> <tr> <td></td> <td></td> <td>water saturated, heaving</td> </tr> <tr> <td>56</td> <td>57</td> <td>Clay - Silty - Sandy Brown</td> </tr> <tr> <td>57</td> <td>87</td> <td>Sand - Gray</td> </tr> <tr> <td></td> <td></td> <td>Heaving w/ water</td> </tr> <tr> <td>87</td> <td>98</td> <td>Gravel, Sand, - Silty</td> </tr> <tr> <td></td> <td></td> <td>with clay stringers</td> </tr> <tr> <td>98</td> <td>110</td> <td>Gravel - Angular - Silty</td> </tr> <tr> <td></td> <td></td> <td>with clay stringers</td> </tr> <tr> <td>110</td> <td>135</td> <td>Gravel & Coarse Sand</td> </tr> <tr> <td>135</td> <td>138</td> <td>Sand - Fine</td> </tr> <tr> <td>138</td> <td>150</td> <td>Gravel & Coarse Sand</td> </tr> <tr> <td></td> <td></td> <td>w/ water - Air Lift 390 Gpm</td> </tr> </tbody> </table>	Depth (ft.)		Formation	From	To	0	2 1/2	Top Soil	2 1/2	7	Sands & Small Gravels	7	31	Gravels & Cobbles	31	56	Sand, Fine Brown			water saturated, heaving	56	57	Clay - Silty - Sandy Brown	57	87	Sand - Gray			Heaving w/ water	87	98	Gravel, Sand, - Silty			with clay stringers	98	110	Gravel - Angular - Silty			with clay stringers	110	135	Gravel & Coarse Sand	135	138	Sand - Fine	138	150	Gravel & Coarse Sand			w/ water - Air Lift 390 Gpm
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56	57	Clay - Silty - Sandy Brown																																																				
57	87	Sand - Gray																																																				
		Heaving w/ water																																																				
87	98	Gravel, Sand, - Silty																																																				
		with clay stringers																																																				
98	110	Gravel - Angular - Silty																																																				
		with clay stringers																																																				
110	135	Gravel & Coarse Sand																																																				
135	138	Sand - Fine																																																				
138	150	Gravel & Coarse Sand																																																				
		w/ water - Air Lift 390 Gpm																																																				
7. CONSTRUCTION DETAILS: Casing: Steel Dia. <u>8" id</u> from <u>+2</u> ft. to <u>-148</u> ft. Threaded <input type="checkbox"/> Welded <input checked="" type="checkbox"/> Dia. _____ from _____ ft. to _____ ft. Type _____ Wall Thickness <u>.250</u> Casing: Plastic Dia. _____ from _____ ft. to _____ ft. Weight _____ Dia. _____ from _____ ft. to _____ ft. PERFORATIONS: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Type of perforator used _____ Size of perforations _____ in. by _____ in. _____ perforations from _____ ft. to _____ ft. _____ perforations from _____ ft. to _____ ft. _____ perforations from _____ ft. to _____ ft. SCREENS: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Manufacturer's Name _____ Type _____ Model No. _____ Dia. _____ Slot size _____ from _____ ft. to _____ ft. Dia. _____ Slot size _____ from _____ ft. to _____ ft. GRAVEL PACKED: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Size of gravel _____ Gravel placed from _____ ft. to _____ ft. GROUTED: To what depth? <u>Continues ft. Feed</u> Material used in grouting <u>Bentonite to 66 ft.</u>																																																						
8. WELL HEAD COMPLETION: Pitless Adapter <input type="checkbox"/> Yes <input type="checkbox"/> No	13. DATE COMPLETED <u>3/6/98</u>																																																					
9. PUMP (if installed) Manufacturer's name _____ Type _____ Model No. _____ HP. _____																																																						
10. WELL TEST DATA The information requested in this section is required for all wells. All depth measurements shall be from the top of the well casing. All wells under 100 gpm must be tested for a minimum of one hour and provide the following information: a) Air _____ Pump <input checked="" type="checkbox"/> Bailer _____ b) Static water level immediately before testing <u>21</u> ft. If flowing; closed-in pressure _____ psi. _____ gpm. Flow controlled by: _____ valve, _____ reducers, _____ other, (specify) _____ c) Depth at which pump is set for test <u>163'</u> d) The pumping rate: <u>240</u> gpm. e) Pumping water level <u>28</u> ft. at <u>1 1/4</u> hrs. after pumping began.	14. DRILLER/CONTRACTOR'S CERTIFICATION This well was drilled under my jurisdiction and this report is true to the best of my knowledge. <u>3/11/98</u> Date <u>Blackfoot Well Drilling</u> Firm Name <u>385 Redtail Road, Bonner, MT.</u> Address <u>Daniel Westby</u> <u>578/348</u> Signature License No.																																																					

MONTANA DEPARTMENT OF NATURAL RESOURCES & CONSERVATION

1520 EAST SIXTH AVENUE

HELENA, MONTANA 59620-2301

444-6610

DNRC

M: 167189

RCVD FTS 03/11/20

Test Pumping Log on Well #1 Magnolia Estates Public Water Supply System. Performed on 3/6/1998							
Measurements taken from casing head plus 3" for drop pipe hanger vice, casing extends 2 feet above grade							
Total Test Pump Duration 10 hrs. 45 min. Total Sustained Yield time 8 hrs.							
Pumping Equipment Used, 250 GPM Berkley Pump with 7 1/2 HP Franklin Motor #6S2BH							
Pump set to 63 feet below casing head							
Clock Time	Testing Time	Pumping Volume	Water Level	Clock Time	Testing Time	Pumping Volume	Water Level
8:00 AM	Static Level	0	21' 2 1/2"	12:30	5:00	290	27' 11 1/2"
8:00:06	0:00:06	320	24' 1/2"	12:45	5:15	290	27' 11 5/8"
8:00:12	0:00:12	320	27' 1/8"	1:00	5:30	290	27' 11 3/4"
8:00:18	0:00:18	320	28' 5 1/2"	1:15	5:45	290	28'
8:00:24	0:00:24	320	28' 7 3/8"	1:30	6:00	290	28' 1/8"
8:00:30	0:00:30	320	28' 9 1/4"	1:45	6:15	290	28' 1/8"
8:00:36	0:00:36	320	28' 11"	2:00	6:30	290	28' 1/8"
8:00:42	0:00:42	320	28' 11 1/2"	2:15	6:45	290	28' 1/8"
8:00:48	0:00:48	320	29'	2:30	7:00	290	28' 1/8"
8:00:54	0:00:54	320	29' 1/2"	2:45	7:15	290	28' 1/8"
8:01:00	0:01:00	320	29' 1"	3:00	7:30	290	28' 1/8"
8:02:00	0:02:00	320	29'	3:15	7:45	290	28' 1/8"
8:03	0:03:00	320	29'	3:30	8:00	290	28' 1/8"
8:04	0:04:00	320	29' 1"	3:45	8:15	290	28' 1/8"
8:05	0:05:00	320	29' 1"	4:00	8:30	290	28' 1/8"
8:06	0:06:00	320	29' 1"	4:15	8:45	290	28' 1/8"
8:07	0:07:00	320	29' 1"	4:30	9:00	290	28' 1/4"
8:08	0:08:00	320	29' 2"	4:45	9:15	290	28' 3/8"
8:09	0:09:00	320	29' 2"	5:00	9:30	290	28' 3/8"
8:10	0:10:00	320	29' 2"	5:15	9:45	290	28' 3/8"
8:20	0:20:00	320	29' 2"	5:30	10:00	290	28' 1/2"
8:30	0:30:00	320	29' 3"	5:45	10:15	290	28' 1/2"
8:40	0:40:00	320	29' 3"	Static Recovery Rate			
8:50	0:50:00	320	29' 3"	5:45:30	0:00:30	0	21' 10 3/4"
9:00	1:00:00	320	29' 4"	5:45:45	0:00:45	0	21' 6 5/8"
9:15	1:15:00	320	29'	5:46	0:01:00	0	21' 5 1/8"
9:30	1:30:00	320	28' 11"	5:47	0:02:00	0	21' 4 3/8"
Pumping Rate Reduced				5:48	0:03:00	0	21' 3 1/2"
9:45	1:45	290	28' 1 1/2"	5:49	0:04:00	0	21' 3 3/4"
10:00	2:00	290	28' 1"	5:50	0:05:00	0	21' 3 3/4"
10:15	2:15	290	28' 1/4"	5:51	0:06:00	0	21' 3 5/8"
10:30	2:45	290	28' 1/8"	5:52	0:07:00	0	21' 3 5/8"
10:45	3:00	290	28' 3/8"	5:53	0:08:00	0	21' 3 1/2"
11:00	3:15	290	28' 1/8"	5:54	0:09:00	0	21' 3 3/8"
11:15	3:45	290	28' 1/8"	5:55	0:10:00	0	21' 3 1/2"
11:30	4:00	290	28' 1/4"	6:00	0:15:00	0	21' 3 1/4"
11:30	4:00	290	28' 1/4"	6:05	0:20:00	0	21' 3 1/8"
11:45	4:15	290	28' 1/8"	6:10	0:25:00	0	21' 3"
12:00	4:30	290	27' 11 7/8"	6:15	0:30:00	0	21' 3 1/8"
12:15	4:45	290	27' 11 1/2"	6:20	0:35:00	0	21' 3"

MONTANA WELL LOG REPORT**Other Options**

This well log reports the activities of a licensed Montana well driller, serves as the official record of work done within the borehole and casing, and describes the amount of water encountered. This report is compiled electronically from the contents of the Ground Water Information Center (GWIC) database for this site. Acquiring water rights is the well owner's responsibility and is NOT accomplished by the filing of this report.

[Return to menu](#)
[Plot this site in State Library Digital Atlas](#)
[Plot this site in Google Maps](#)

Site Name: STONE CONTAINER
GWIC Id: 706497

Section 7: Well Test Data

Total Depth: 115
 Static Water Level:
 Water Temperature:

Section 1: Well Owner(s)**Section 2: Location**

Township	Range	Section	Quarter Sections	Geocode
14N	21W	25	NE¼ NE¼ SW¼ NW¼	
County				
MISSOULA				
Latitude	Longitude	Geomethod	Datum	
46.9458	-114.203	MAP	NAD27	
Ground Surface Altitude	Ground Surface Method	Datum	Date	
3051				
Addition	Block	Lot		

Unknown Test Method *

Yield _ gpm.
 Pumping water level _ feet.
 Time of recovery _ hours.
 Recovery water level _ feet.

** During the well test the discharge rate shall be as uniform as possible. This rate may or may not be the sustainable yield of the well. Sustainable yield does not include the reservoir of the well casing.*

Section 3: Proposed Use of Water

UNUSED (1)

Section 8: Remarks**Section 4: Type of Work**

Drilling Method:
 Status: NEW WELL

Section 9: Well Log**Geologic Source**

112ALVM - ALLUVIUM (PLEISTOCENE)

Lithology Data

There are no lithologic details assigned to this well.

Driller Certification

All work performed and reported in this well log is in compliance with the Montana well construction standards. This report is true to the best of my knowledge.

Section 5: Well Completion Date

Date well completed: Wednesday, January 1, 1997

Section 6: Well Construction Details

There are no borehole dimensions assigned to this well.

Casing

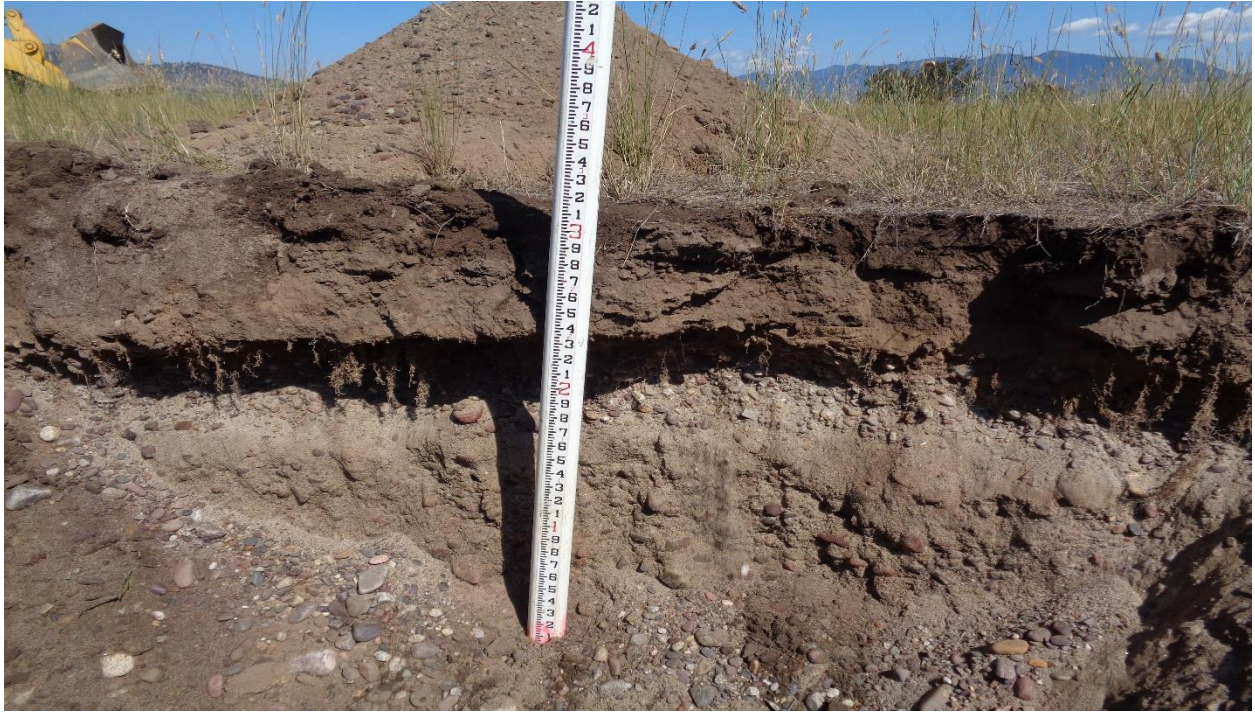
From	To	Diameter	Wall Thickness	Pressure Rating	Joint	Type
-2.3	115	4.5				STEEL

There are no completion records assigned to this well.

Annular Space (Seal/Grout/Packer)

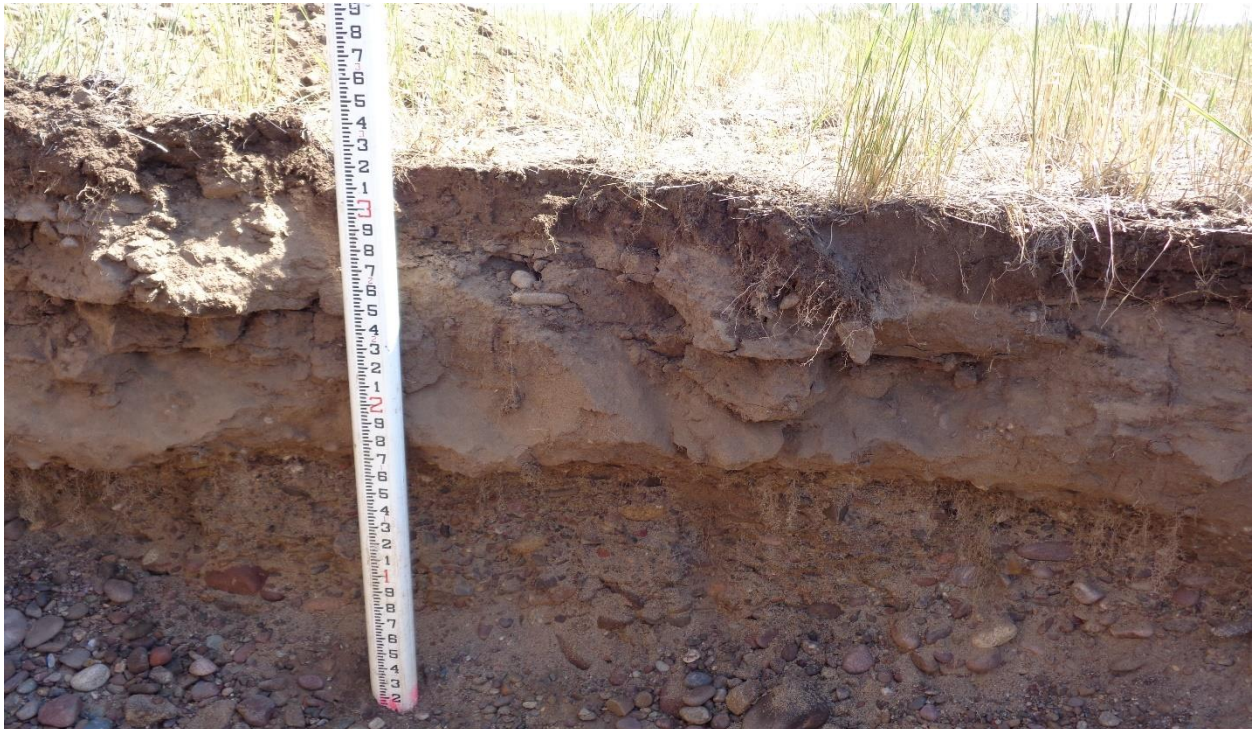
There are no annular space records assigned to this well.

Name:
Company:
License No: -
Date Completed: 1/1/1997



TP #01

TP #02



TP #03



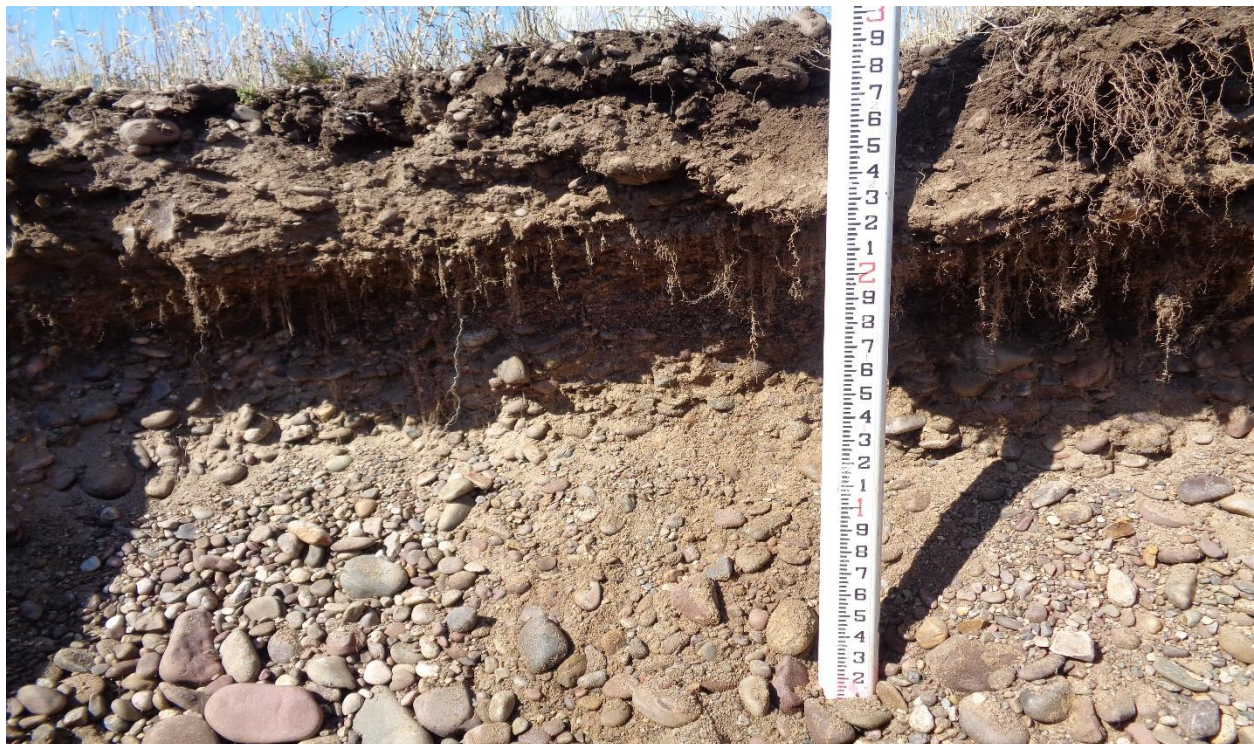
TP #04



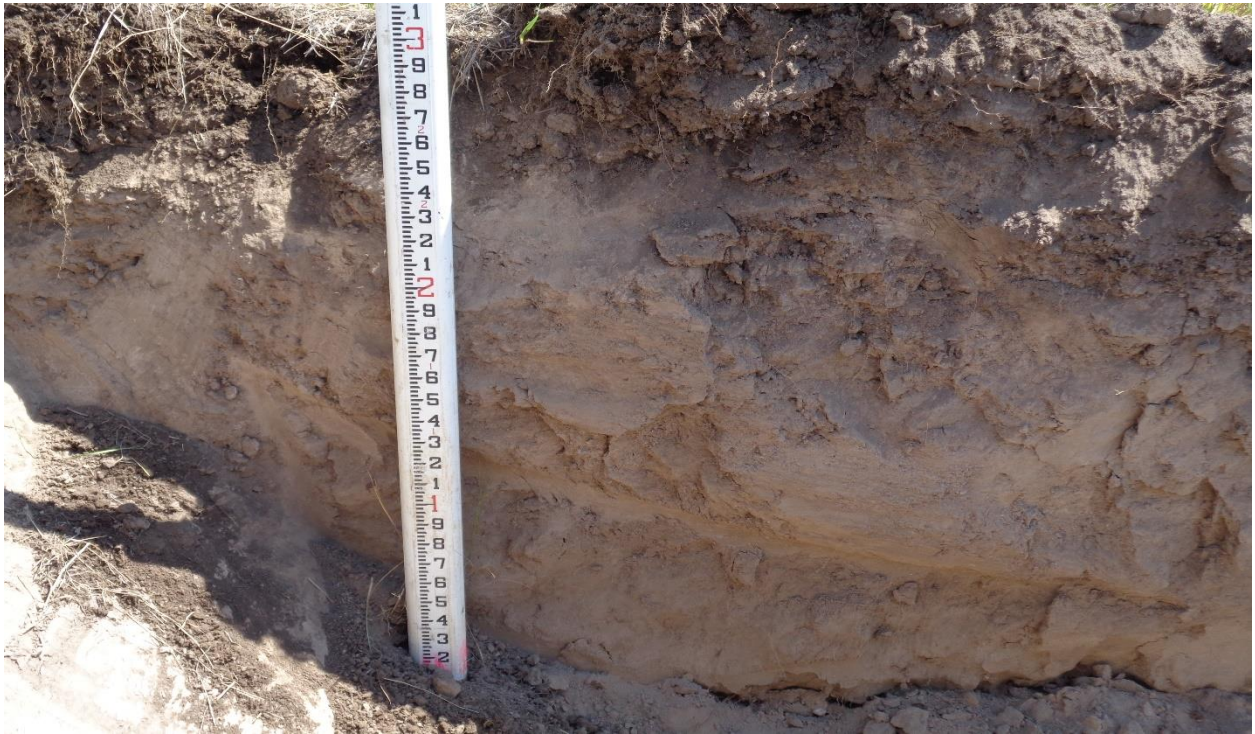
TP #05



TP #06



TP #07



TP #08



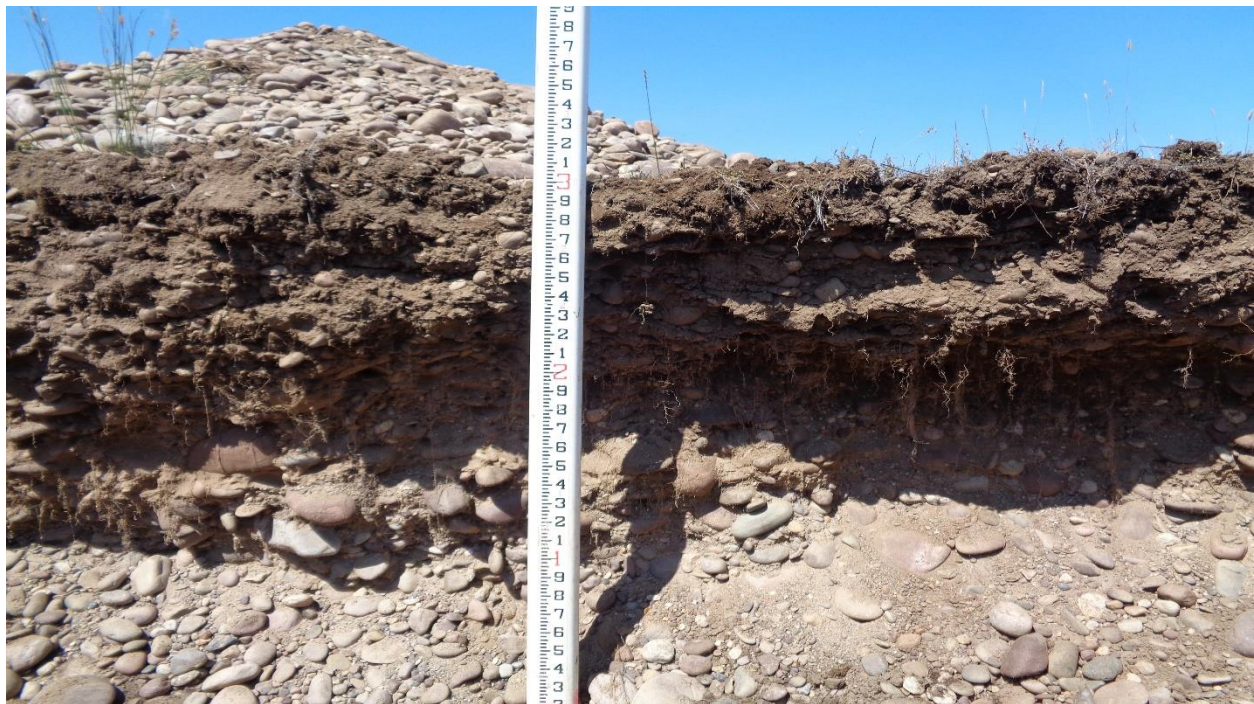
TP #09



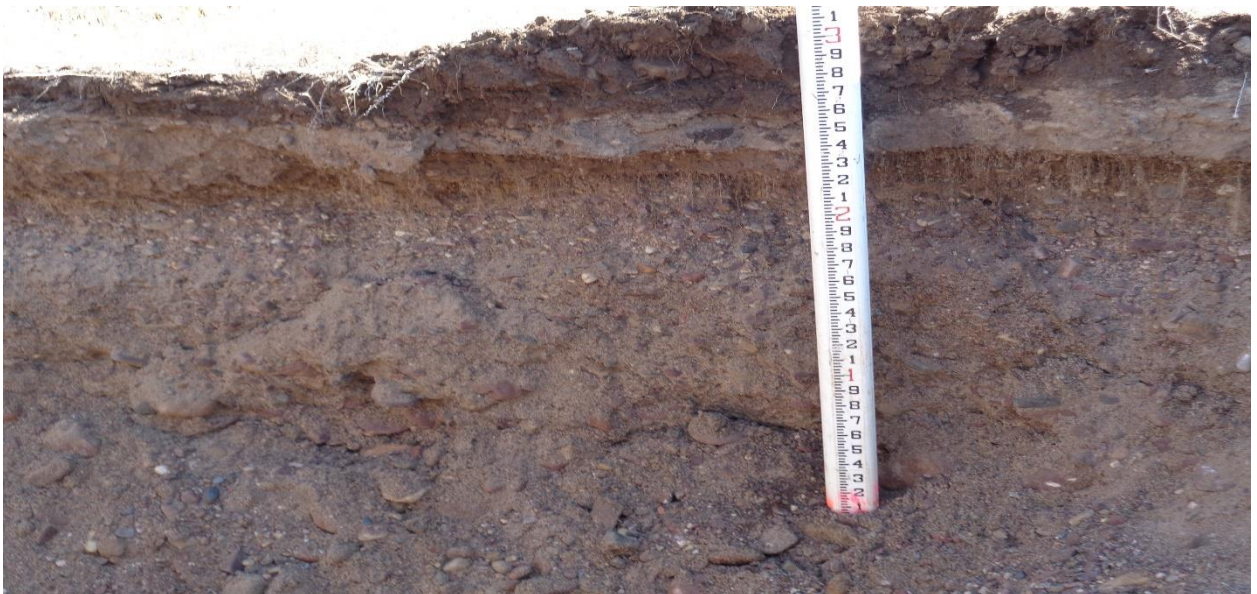
TP #10



TP #11



TP #12

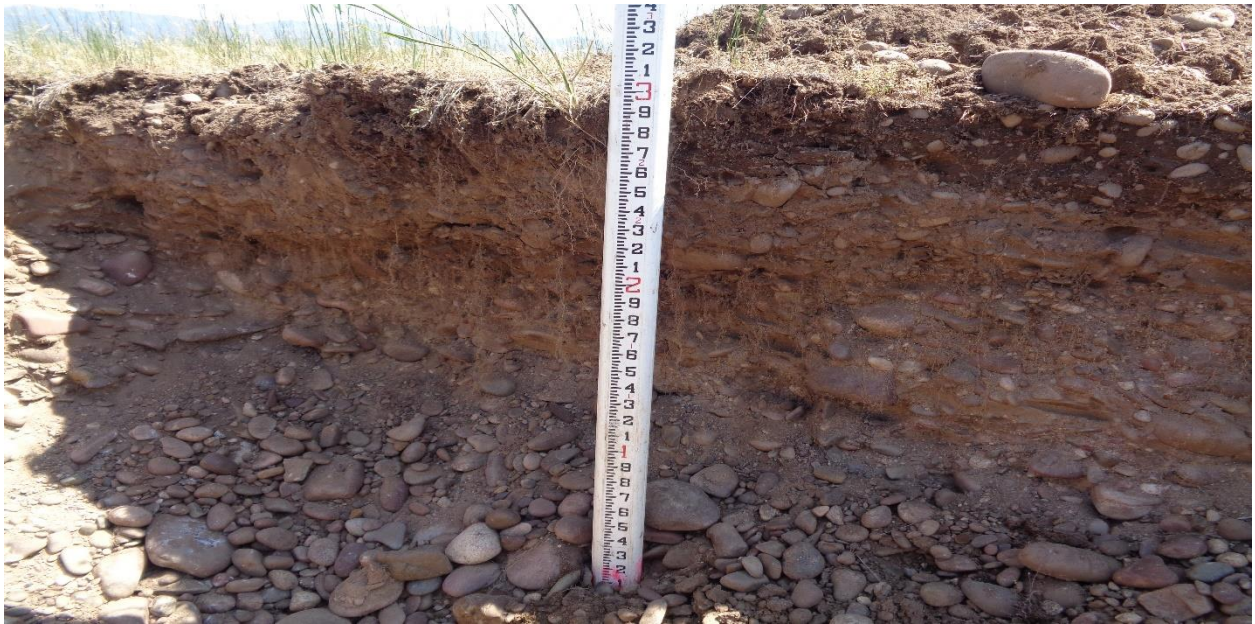




TP #13

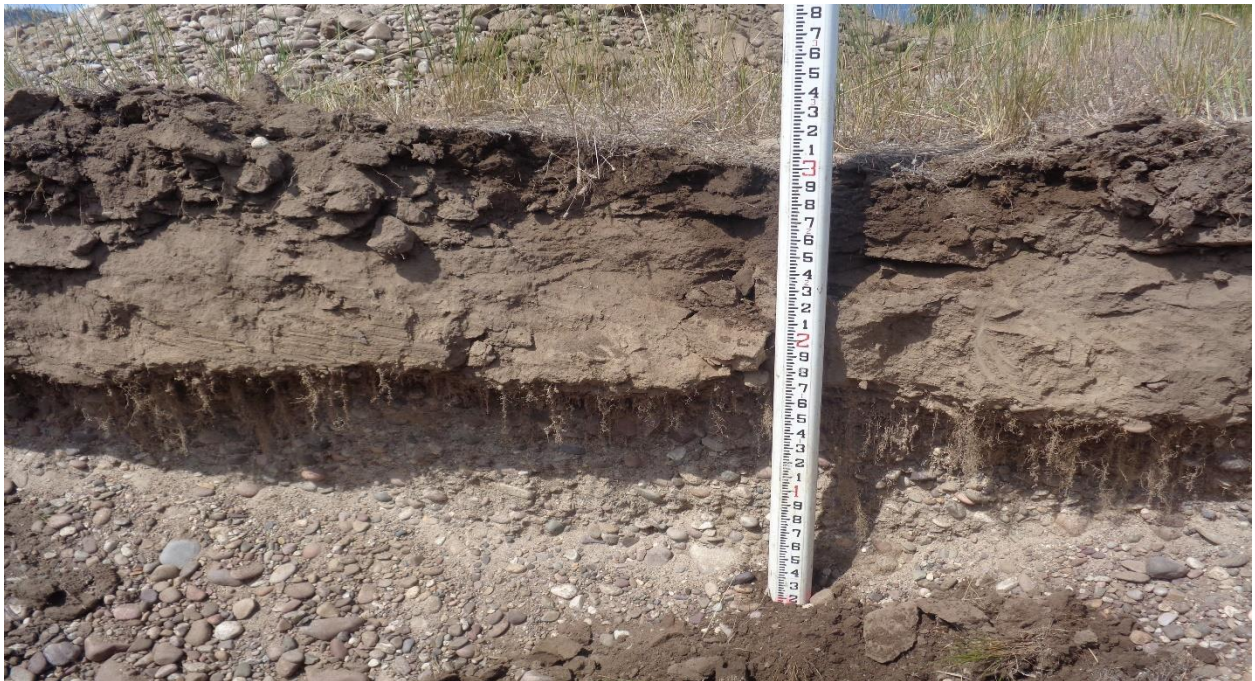
TP #14

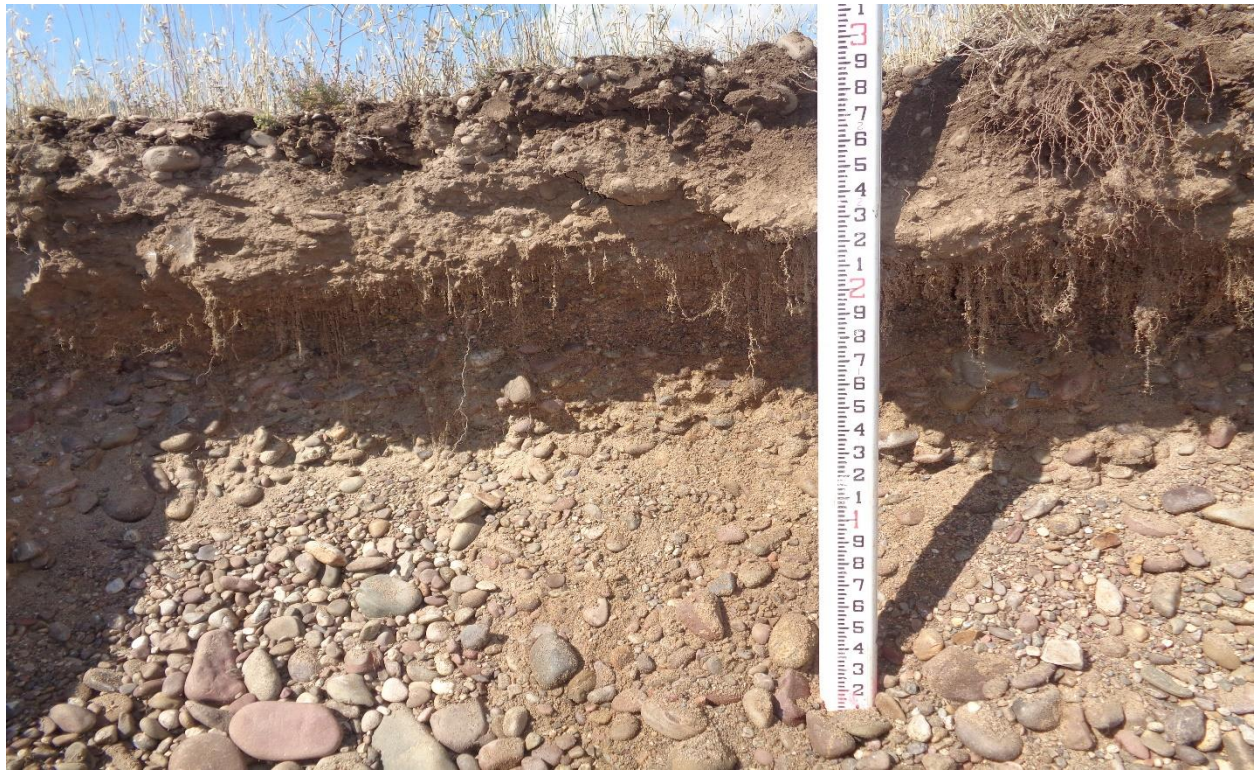




TP #15

TP #16





TP #17

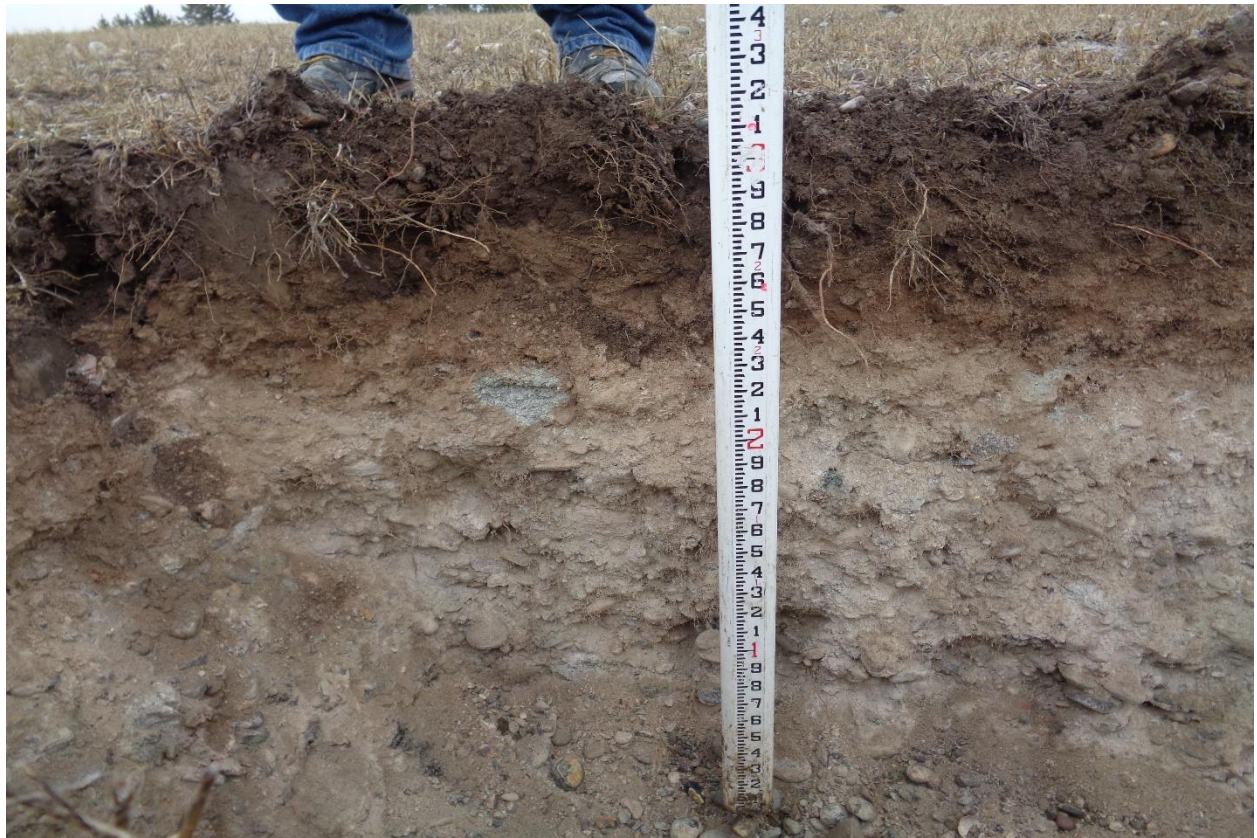
TP #18





TP #19

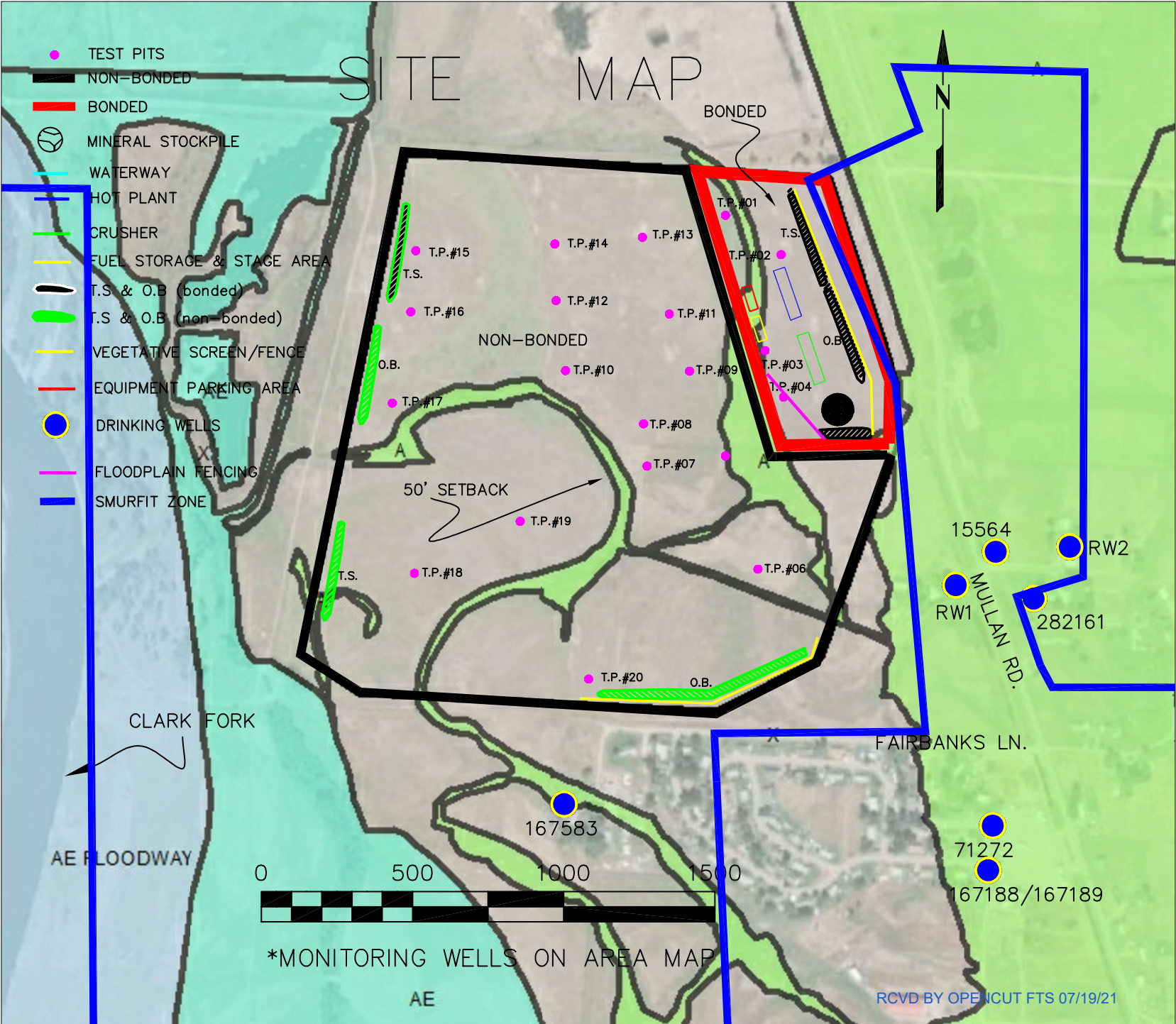
TP #20



PA PROSPECT CORP.
CLARK FORK PIT
T14N, R21W, S25
MISSOULA COUNTY

DRAFTED BY:
CHARLIE JOHNSTON

07/01/2021



PA PROSPECT CORP.
CLARK FORK PIT
T14N, R21W, S25
MISSOULA COUNTY

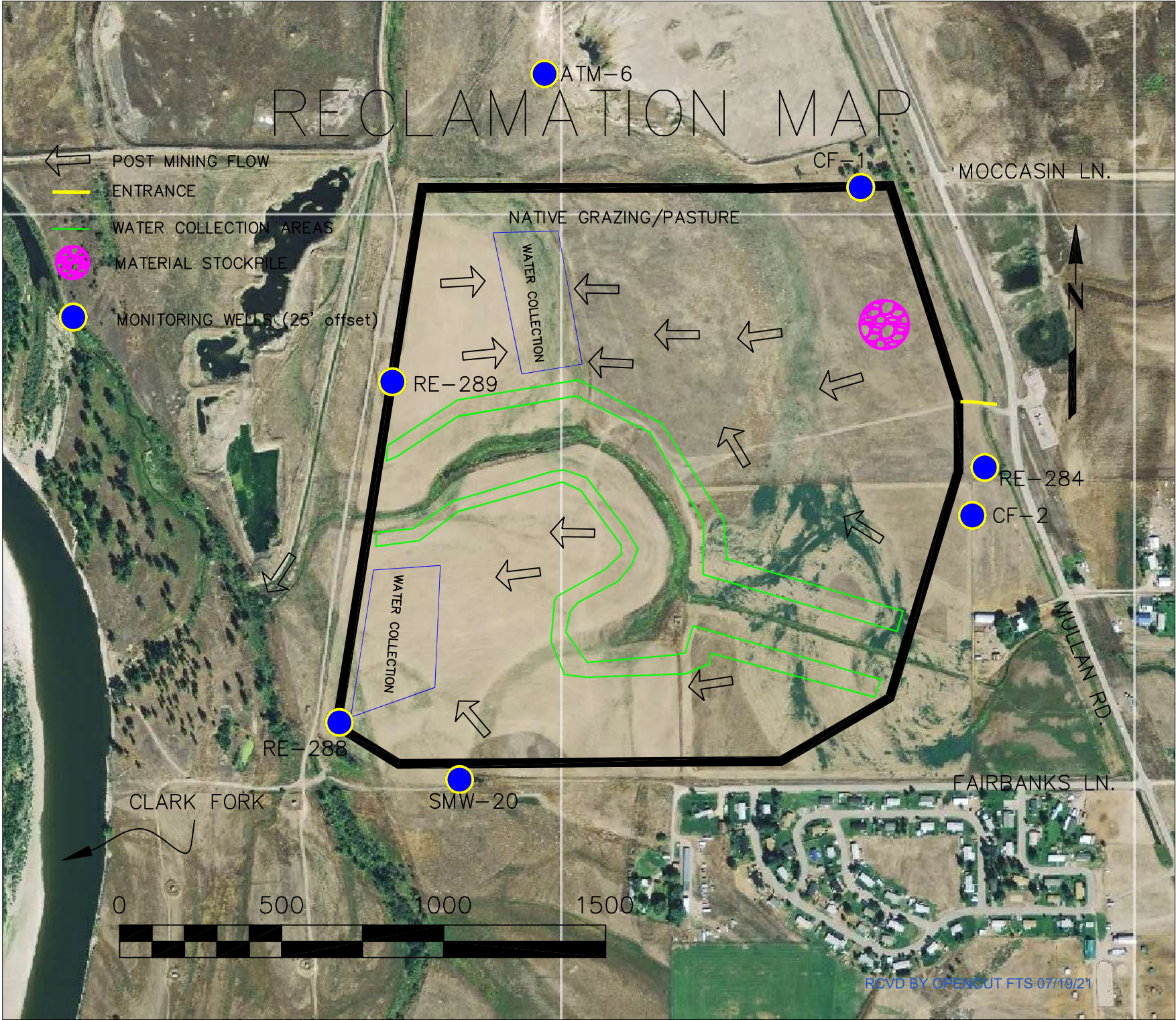
DRAFTED BY:
CHARLIE JOHNSTON

07/01/2021



PA PROSPECT CORP.
CLARK FORK PIT
T14N, R21W, S25
MISSOULA COUNTY

DRAFTED BY:
CHARLIE JOHNSTON
07/01/2021



PA PROSPECT CORP.

CLARK FORK PIT

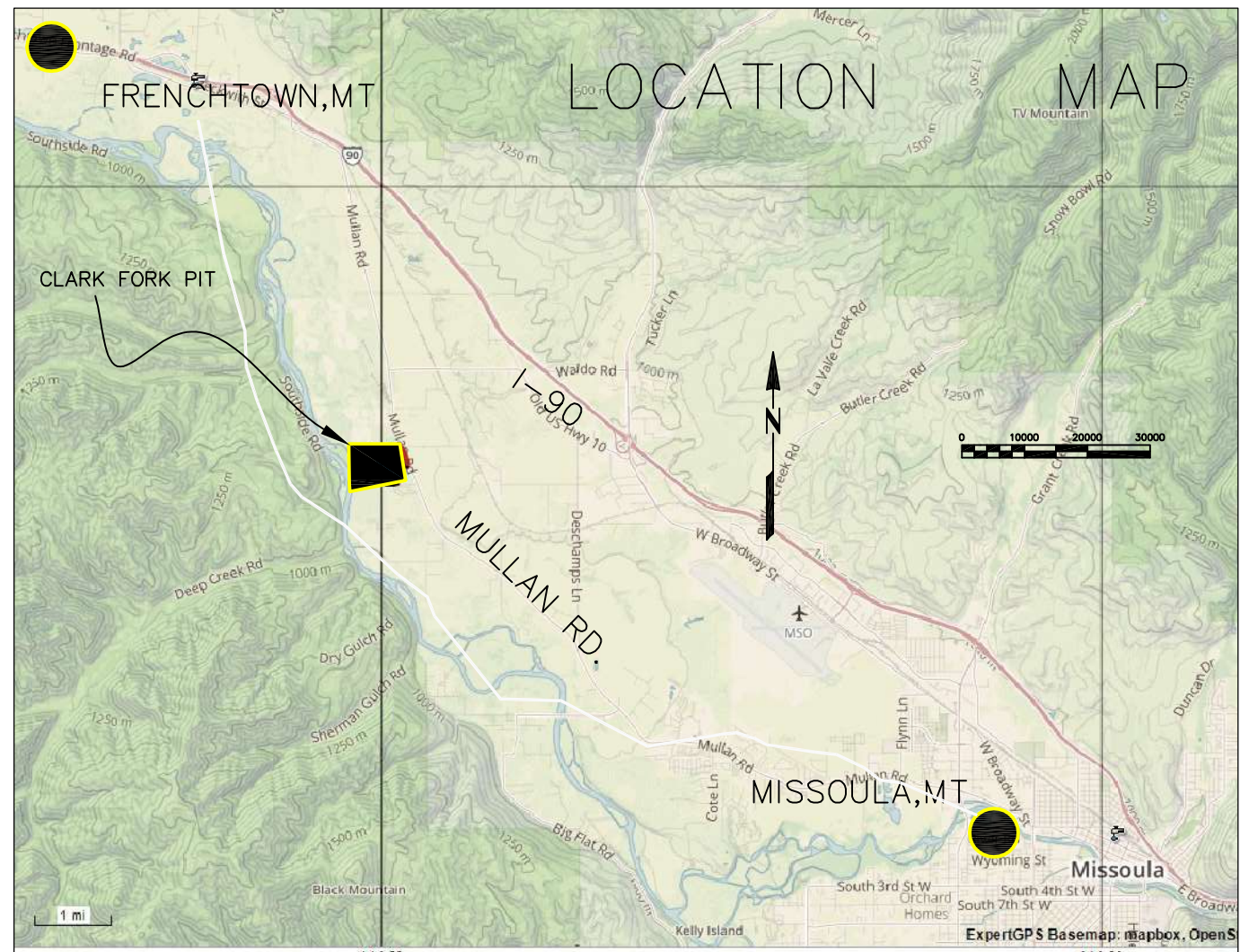
T14N, R21W, S25

MISSOULA COUNTY

DRAWN BY:

CHARLIE JOHNSTON

02/02/2021





OPERATOR PROPOSED PERMIT BOUNDARY COORDINATES TABLE

Purpose of this Boundary Coordinate Table: Permit Application

- 1) Use this form to submit coordinates to delineate the **Operator Proposed Permit Boundary**.
- 2) If delineating multiple Permit Boundaries, use separate **Operator Proposed Permit Boundary** tables to delineate each Permit Boundary.
- 3) When providing coordinates for an **Amended** Permit boundary, you must include coordinates that delineate the *entire* new Operator Proposed Permit Boundary (i.e. one proposed boundary that encompasses both the existing permitted boundary and proposed amendment area).
- 4) If **Bonded** and **Non-Bonded** area is present, complete the **Operator Proposed Non-Bonded Boundary Coordinate** table in addition to this form.
- 5) All boundaries are created automatically by a computer program, therefore;
 - All coordinates **must** be in geographic sequence, so that the Operator Proposed Permit Boundary is created by connecting Map ID #P1 to Map ID #P2 to Map ID #P3, etc.
 - The last Map ID # in the BCT would connect to the first Map ID# to complete the boundary.
 - The Map ID# for each coordinate (e.g. P1, P2, P3 etc.) must be shown on the site map.
 - Coordinates must be submitted in **Decimal Degrees** and **WGS 84** datum and include a negative longitude to plot in Montana.
- 6) **Do Not** provide coordinates for any other features (e.g. screen, test holes, asphalt plant, etc.).
Do Not leave blank rows in between coordinates in the BCT. Providing coordinates for additional features or leaving spaces will result in a boundary that cannot be drawn and the BCT will be deemed incomplete and/or deficient.
- 7) Only put numerical coordinates in the Latitude or Longitude boxes (i.e. no "N" or "W"), or this BCT will not be accepted. Coordinates must be in decimal degree format and provided to the fifth decimal point.
 Example: Latitude 46.58946 & Longitude -112.00480.
- 8) Email the completed Microsoft Excel table to: DEOopencut@mt.gov with "Subject" line: **BCT (Operator-Site Name)**. Do not include a printed version of this table with the paper application submitted to the Program's Helena office.

Operator Name: PA Prospect Corp.

Site Name: Clark Fork Pit

Permit # (if not a new app)

Date: 2/22/2021

MAP ID#	LATITUDE	LONGITUDE (must be negative)	DESCRIPTION (not required)
P1	46.94699	-114.19286	
P2	46.94775	-114.19295	
P3	46.95029	-114.19441	
P4	46.95032	-114.19639	
P5	46.95028	-114.20230	
P6	46.94385	-114.20371	
P7	46.94339	-114.20259	
P8	46.94343	-114.19593	
P9	46.94420	-114.19401	
P10		-	
P11		-	
P12		-	
P13		-	
P14		-	
P15		-	
P16		-	

POINTS ARE VALID

OPERATOR PROPOSED NON-BONDED BOUNDARY COORDINATE TABLE

Private Operators bonding the entire site would **Not** use this table.

Counties and other Government agencies not required to post a bond would **Not** use this table.

Use the **Operator Proposed Permit Boundary Coordinate** table to depict the operator proposed permit boundary.

1) Use this form to submit coordinates to delineate the Operator Proposed Non-Bonded boundary only. By default, the remaining area would be the Bonded area.

2) If delineating multiple Non-Bonded boundaries, use separate **Operator Proposed Non-Bonded Boundary Coordinate** tables to delineate each Non-Bonded boundary.

3) This table must be submitted in conjunction with the Operator Proposed Permit Boundary Coordinate Table, which delineates the entire proposed permit boundary, except when the existing permit boundary is not changing. If the permit boundary is already defined by coordinates and isn't changing, do not resubmit an Operator Proposed Permit Boundary Coordinates Table.

4) All boundaries are created automatically by a computer program, therefore:

- All coordinates must be in geographic sequence, so that the Operator Proposed Permit Boundary is created by connecting Map ID #N1 to Map ID #N2 to Map ID #N3, etc.
- The last Map ID # in the BCT would connect to the first Map ID# to complete the boundary.
- The Map ID# for each coordinate (e.g. N1, N2, N3 etc.) must be shown on the site map.
- Coordinates must be submitted in Decimal Degrees and WGS 84 datum and include a negative longitude to plot in Montana

5) **Do Not** provide coordinates for any other features (e.g. screen, test holes, asphalt plant, etc.).

Do Not leave blank rows in between coordinates in the BCT.

Providing coordinates for additional features or leaving spaces will result in a boundary that cannot be drawn and the BCT will be deemed incomplete and/or deficient.

6) Only put numerical coordinates in the Latitude or Longitude boxes (i.e. no "N" or "W"), or this BCT will not be accepted. Coordinates must be in decimal degree format and provided to the fifth decimal point.

Example: Latitude 46.58946 & Longitude -112.00480.

7) Email the completed Microsoft Excel table to: DEQopencut@mt.gov with "Subject" line: **BCT (Operator-Site Name)**. Do **not** include a printed version of this table with the paper application submitted to the Program's Helena office.

Operator Name: **PA Prospect Corp.**

Site Name: **Clark Fork Pit**

Permit # (if not a new app)

Date:

2/22/2021

MAP ID#	LATITUDE	LONGITUDE	DESCRIPTION (not required)
N1	46.95032	-114.19639	
N2	46.95028	-114.20230	
N3	46.94385	-114.20371	
N4	46.94339	-114.20259	
N5	46.94343	-114.19593	
N6	46.94420	-114.19401	
N7	46.94699	-114.19286	
N8	46.94691	-114.19487	
N9		-	
N10		-	
N11		-	
N12		-	
N13		-	
N14		-	
N15		-	

WEED BOARD NOTIFICATION OF OPENCUT OPERATION

In accordance with the Opencut Mining Act and its implementing Rules (ARM 17.24.218(j)(iii)), an Operator applying for an Opencut Mining Permit must:

- Complete this form;
- Submit it to the weed board in the county or counties in which the proposed Opencut operation is located; and,
- Attach a copy to the Opencut Mining Permit application submitted to the Montana Department of Environmental Quality (DEQ).

All fields must be completed and a Location Map must be attached.

In accordance with ARM 17.24.221, the **Location Map** may be on an aerial or topo base, and must show the site location in relation to the nearest town, city, or major intersection and be sufficient to allow the public to locate the proposed site. The map must also provide:

- Operator name
- Site name
- Legal description of the proposed permit area (Section, Township, and Range)
- Bar scale
- North arrow
- Date of drafting

Operator Name: PA Prospect Corp.

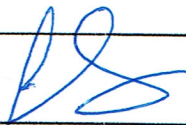
Site Name: Clark Fork Pit

County: Misoula

OPERATOR CERTIFICATION: The person signing below certifies that: *a)* a Location Map meeting the requirements of ARM 17.24.221 was attached; and *b)* the form and map were submitted to the weed board in the county or counties in which the proposed Opencut operation is located.

Printed Name: Charlie Johnston

Title: Engineer

Signature: 

Date: 03-04-20

Reclamation Bond Spreadsheet

INSTRUCTIONS: Enter your data in the shaded boxes. See page 3 for detailed instructions.

Operator Name: **PA Prospect Corp.**

Site Name: **Clark Fork Pit**

Prepared by: **Charlie Johnston**

Date: **2/22/2021**

Total Permitted Acres = **135.03** acres*

*Must match the "Total Permitted Acres" in A1-12 of the Opencut Mining Plan of Operation & Application.

Comments:

BONDED ACREAGE BREAKDOWN

Must match the "Acreage Breakdown" in section A1-12 of the Opencut Mining Plan of Operation & Application.

Bonded **15.0** acres
 Phase I Release Bonded Area **0.0** acres
 Non-Bonded **120.0** acres
 Access Road **0.0** acres
 Total Bonded Area = **15.0** acres**

**The Total Bonded Area must be identical to the acreage on the Bond submitted by the Operator to the Department.

Lineal Feet & Height must match section D4-8 of Opencut Mining Plan of Operation & Application, and reclamation slope ratio must match section E4-2

Highwall Cut/Fill (refer to section D4-8)

Description	linear feet	height	reclamation slope ratio	cubic yards	
5:1 SLOPE	1000	6	5 :1	833	total
			:1	0	833

Highwall Backfill (refer to section D4-8 & D6) - Covers cost of grading & sloping fill material along highwall face to create the permitted slope. Must also complete **Backfill Transport/Placement** line item below.

Description	linear feet	height	reclamation slope ratio	cubic yards	
			:1	0	total
			:1	0	0

Mine Area Backfill (Refer to section D6) - Covers the cost of placing backfill material in the pit or to raise the level of the pit floor. Must also complete **Backfill Transport/Placement** line item below.

Description	acres	depth	compaction %	cubic yards	
				0	total
				0	0

Mine soil replacement	6 inches soil	Overburden Replacement	6 inches OB	total	12
Access road soil replacement	inches soil	Overburden Replacement	inches OB	total	0

* Soil and overburden inches must match section C2-4.

ITEM	UNIT	AMOUNT	RATE	TOTAL
Highwall Cut/Fill		833 cu yds	\$1 per cubic yard	\$833
Highwall Backfill & Mine Area Backfill		0 cu yds	\$1.50 per cubic yard	\$0
Backfill Transport/Placement Cost-Onsite \$2cy, offsite \$15cy		0 cu yds	per cubic yard	\$0
Bonded area grading		15.0 acres	\$100 per acre	\$1,500
Bonded area ripping		15.0 acres	\$100 per acre	\$1,500
Bonded soil and OB replacement	12 inches	15.0 acres	\$1.25 per cubic yard	\$30,250
Access road area grading		0.0 acres	\$100 per acre	\$0
Access road area ripping		0.0 acres	\$100 per acre	\$0
Access road soil replacement	0 inches	0.0 acres	\$1.25 per cubic yard	\$0
Seeding or other revegetation		15.0 acres	\$600 per acre	\$9,000
Weed control		15.0 acres	\$100 per acre	\$1,500
Fencing		linear ft	\$1.40 per linear foot	\$0
Cost to crush onsite asphalt		cu yds	\$4 per cubic yard	\$0
Cost to import, purchase and place soil		cu yds	\$18 per cubic yard	\$0
Cost to bond for reject fines		cu yds	\$1 per cubic yard	\$0
				\$0
				\$0
				\$0

Total = \$44,583

Indirect Reclamation costs to DEQ (Mob/DeMob, Contingency, Engineering, Overhead, & Project Management) = 25% up to \$1,000,000 bond and 20% for a bond over \$1,000,000. Minimum Bond Amount is \$25,000

\$11,146

Total Area Bonded = **15.0**

Rate Per Bonded Acre = **\$3,717.73**

Total Bond = \$55,729

LANDOWNER CONSULTATION

This form is required for **all** applicants applying for an Opencut Mining permit **or** for an amendment that will: **a)** add acreage, an asphalt plant, or a concrete plant; **b)** change the postmining land use; or **c)** extend the reclamation date [MCA 82-4-432(2)(d); ARM 17.24.206].

OPERATOR SECTION: All fields must be completed.

Operator Name: PA Prospect Corporation

Site Name: Clark Fork Pit

County: Missoula

Section 25 Township 14 ☒ N or ☐ S Range 21 ☐ E or ☒ W and Section 25 Township 14 ☒ N or ☐ S Range 21 ☐ E or ☒ W

Additional legal description if necessary: _____

The person signing below represents that (*check one box*):

☐ I am an officer or an employee of the Operator and I am duly authorized to bind the Operator, which is a corporation, limited partnership, limited liability company, or other corporate entity in good standing and authorized to do business in Montana, and in this capacity I acknowledge and certify that:

Or

☒ I am the Operator and I acknowledge and certify that:

- 1) The Operator consents to and acknowledges that the DEQ and its representatives may access the site to inspect the permit area at any reasonable time, and that while the DEQ attempts to provide reasonable notice of an inspection to the operator when practicable under the circumstances, inspections may be conducted without prior notice as necessary to determine whether Opencut operations are being conducted in compliance with the permit, Act, and rules [82-4-422(1)(d) and 425, MCA] & [ARM 17-24-206(2)(f) and 206(3)].
- 2) The Operator shall complete reclamation: **a)** in accordance with the approved Plan of Operation and as concurrent with operations as feasible; **b)** within one year of the cessation of operations or the termination of the right to conduct operations; and **c)** no later than the permitted final reclamation date.

By: _____

Signature

Title

Gerald Nelson

Legibly print or type name

9-13-19

Date

LANDOWNER SECTION: All fields must be completed. A private road may be included as affected land only with the landowner's consent [MCA 82-4-403(1)].

A. Does the Landowner want the Operator to permit an access road(s) (i.e. existing or proposed non-public road that connects an Opencut operation to a public access)?

☒ **Not applicable:** The site will be accessed from the immediately adjacent public road.

☐ **No:** The landowner does not want an access road included in the permit.

☐ **Yes and:** ☐ Access road will be reclaimed at final reclamation **or** ☐ Access road will remain at final reclamation:

Access Road 1 Width: _____ feet, Location must be identified on the site map and reclamation map.

Access Road 2 Width: _____ feet, Location must be identified on the site map and reclamation map.

B. Does the Landowner want stockpile(s) of mine material left at the conclusion of Opencut operations? ☐ No ☒ Yes

Note: **a)** mine material must be left in a location that will be accessible by road; **b)** the total volume of mine material left is typically 10,000 cubic yards or less (to help ensure it can be consumed and the site reclaimed within 5-10 years); and **c)** once consumed, the Landowner is responsible for reclaiming the area using a soil stockpile left by the Operator for that purpose.

If **Yes**, as per ARM 17.24.219(1)(b), describe the type and volume of mine material(s) to be left:

1. Type of mine material(s) to be left: ☒ Gravel ☒ Sand ☐ Other: _____

2. Total volume of mine material to be left in cubic yards: 8,000 CY

3. If the total is more than 10,000 cubic yards, identify potential local uses consistent with it being consumed within 5-10 years:

C. Does the Landowner consent to allow the burial of onsite generated asphalt on their land within the permitted boundaries?

☒ No ☐ Yes (in accordance with ARM 17.24.219(1)(b))

If **Yes**, refer to section D7-1 of the Opencut Mining Plan of Operation and Application.

LANDOWNER SECTION (Continued):

D. Landowner acknowledges and affirms the following:

1. The Operator is applying for a permit to conduct operations in accordance with: *a)* the Opencut Mining Act (Title 82, chapter 4, part 4, MCA); *b)* its implementing rules (ARM Title 17, chapter 24, subchapter 2); and *c)* the site-specific Plan of Operation.
2. The Landowner: *a)* owns the land and the legal rights to all its earthen materials are owned or have been obtained; *b)* has been consulted by the Operator about the proposed Plan of Operation; and *c)* understands the Montana Department of Environmental Quality (DEQ) may require the Operator to revise that Plan before the permit or amendment is approved.
3. If the DEQ approves the permit, the following will apply to the permit area:
 - a. The Operator will have the exclusive right to conduct Opencut operations.
 - b. The Operator and future assignees (party assuming the permit) may allow another party to conduct permitted Opencut operations only if the Operator retains control over that party's activities and the Operator remains responsible for any violations that may occur.
 - c. The Landowner may not authorize Opencut operations by another party until that party obtains the Operator's permission.
4. The DEQ can enforce requirements of the Act, rules, and permit. Any other arrangements or understandings between the Landowner and Operator are private matters that should be stated in a separate written agreement between those two parties.
5. DEQ personnel have the right to access the site to inspect the permit area at any reasonable time. The Operator and DEQ's agents or contractors have the right to access the site to complete reclamation in accordance with the Plan of Operation.
6. The Operator may request Phase 1 or Phase 2 release of the permit once the site or a portion of it has been reclaimed according to the Plan of Operation. DEQ will notify the Operator and the Landowner of its decision regarding each release request.
7. DEQ typically releases a site reclaimed to cropland after one successful crop; a site reclaimed to perennial vegetation (i.e. rangeland and/or pasture) is typically released after two complete growing seasons or when revegetation is established, whichever is longer.
8. It is the Landowner's responsibility to disclose this form to any purchaser of the site prior to closing and to advise the purchaser of the status of the Opencut Mining permit.
9. If a pond remains at final reclamation, it may be the landowner's responsibility to obtain a water right from the DNRC if one is required.

E. The following must be filled out for sites located in Sage Grouse Habitat:

If the site is in Sage Grouse habitat designated by Executive Orders 12-2015 and 21-2015, and any part of the proposed permit area is privately owned, the private Landowner acknowledges that he/she:

- Has knowledge of the Montana Sage Grouse Habitat Conservation Program letter contained in the Opencut permit application, and understands the letter provides recommendations for reclamation of this site to maintain sage grouse populations and habitat so Montana can manage its own lands, wildlife, and economy, and a listing under the Endangered Species Act will not be warranted.
- Understands Executive Order 12-2015 stipulates that:
 - Reclamation should re-establish native grasses, forbs, and shrubs to achieve cover, species composition, and life form diversity commensurate with the surrounding plant community and replace sage grouse habitat to the degree conditions allow.
 - Landowners should be consulted on the desired plant mix on private land and have the option of deciding whether the site will be reclaimed with the recommended sage grouse seed mix or an alternate seed mix.

Landowner chooses the following seed mix:

☐ Recommended seed mix for sage grouse habitat ☐ Alternate seed mix as chosen in Section E6-4 of the application

F. LANDOWNER SIGNATURE:

Landowner Name (print or type): PA Prospect Corporation
Address: PO BOX 785
City: Columbus State: MT Zip: 59019
Phone#: 406.322.9951 Cell Phone# (optional): _____
Email (optional): energyequity@yahoo.com
Landowner Signature: [Signature] Date: 9-13-19

SURFACE LANDOWNERS LIST

Operator:

PA Prospect Corp.

Site:

Clark Fork Pit

An Opencut mining permit or amendment application must include this form if the application is for either:

- A. A new permit (MCA 82-4-432 [5]); or
- B. An amendment increasing the acreage by 50% or more of the amount of permitted acreage in the original permit (MCA 82-4-4432 [11]).

If applicable, the Operator must submit this form to DEQ at two separate points during the application process.

First Submittal - For the application, the Operator must:

- 1- Provide the names of the surface owners of land located within one-half mile of the boundary of the proposed Opencut permit.
- 2- Compile the names using the owners of record as shown in the paper or electronic records of the county clerk and recorder for the county where the proposed Opencut operation is located.
- 3- Obtain the names no more than 60 days prior to submission of the application.
- 4- Include the landowner of the proposed permit area.

Second Submittal - For public notice, the Operator must provide:

- 1- The names and addresses of the surface owners notified pursuant to public notice.
- 2- The date each landowner was sent public notice.

If necessary, use additional sheet(s) to list additional landowners.

Indicate the total number of pages of this Surface Landowners List submittal 3 pages

By submitting this form the Operator affirms that this ☒ **First Submittal (Application)** OR ☐ **Second Submittal**

Submittal of this form certifies that Public Notice must be completed pursuant to the public notice section of MCA 82-4-432.

Email this completed form in Microsoft Excel format to: DEQOpencut@mt.gov with "Subject" line: **SLL (Operator-SiteName)**.

Do not include a printed version of this form with the paper application submitted to the Helena office.

NOTE: When determining the number of surface landowners eligible to request a public meeting:

- 1) Multiple parties owning the same parcel of land are counted as 1 landowner.
- 2) A party owning multiple parcels of land is counted as 1 landowner, regardless of the number of parcels owned.

#	Surface Landowner Name		Mailing Address - Required for public notice				Public Notice Date
	First Name	Last Name	Street Address	City	ST	Zip	
1	M2Green Devel.		14377 Pulp Mill Rd.	Missoula	MT	59808	
2	Frenchtown Rural Fire Dist.		PO 3563	Frenchtown	MT	59808	
3	Steven V	Bidlake	15955 Mullan Rd.	Missoula	MT	59808	
4	Spearhead LLC		PO 17858	Missoula	MT	59808	
5	Magnolia Enterprises LLC		39458 Little Bear Ln.	Polson	MT	59860	
6	James	Sapp	2606 Valley View Dr.	Missoula	MT	59808	
7	Leonard	Tucket	15100 Harpers Bridge Rd.	Missoula	MT	59808	
8	Charles	Blue	14900 Harpers Bridge Rd.	Missoula	MT	59808	
9	MLH Montana LLC		1457 130th Ave. NE	Bellevue	WA	98005	
10	Richard	Babbitt	14800 Harpers Bridge Rd.	Missoula	MT	59808	

11	Gary	Fredericks	14700 Harpers Bridge Rd.	Missoula	MT	59808	
12	Daniel	Job	14560 Harpers Bridge Rd.	Missoula	MT	59808	
13	David	Jorgensen	14550 Harpers Bridge Rd.	Missoula	MT	59808	
14	Donna	Dreyer	14470 Harpers Bridge Rd.	Missoula	MT	59808	
15	Charles	Lehl	14500 Harpers Bridge Rd.	Missoula	MT	59808	
16	Velin Randall Trust		14490 Harpers Bridge Rd.	Missoula	MT	59808	
17	David	Stickler	14480 Harpers Bridge Rd.		MT	59808	
18	Kee Holdings LLC		PO 250		MT	59808	
19	Rodney	Leister	14400 Harpers Bridge Rd.		MT	59806	
20	MT Dep. Fish & Wildlife		PO 200701	Helena	MT	59620	
21	Joyce Starlin Trust		14125 Harpers Bridge Rd.	Missoula	MT	59808	
22	Vicki	Day	13550 Fawn Ln.	Missoula	MT	59808	
23	Gary	Walden	5104 Elks Hills CT	Missoula	MT	59803	
24	Cheryl	Neilson	13805 Fairbanks Ln.	Missoula	MT	59808	
25	Kerry	Schaefer	2379 MT Hwy. 83 N.	Seeley Lake	MT	59868	
26	Dennis	Neilson	13783 Fairbanks Ln.	Missoula	MT	59808	
27	Wesley	Harris	13755 Fairbanks Ln.	Missoula	MT	59808	
28	Gary	Seymour	14150 Harpers Bridge Rd.	Missoula	MT	59808	
29	John	Gerlach	14100 Harpers Bridge Rd.	Missoula	MT	59808	
30	Kirk	Goodman	14000 Harpers Bridge Rd.	Missoula	MT	59808	
31	Missoula County		200 W. Broadway St.	Missoula	MT	59802	
32	Missoula Elect. Coop		200 W. Broadway St.	Missoula	MT	59802	
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35	Randall	Schmill	14090 Mullan Rd.	Missoula	MT	59808	
36	Cha	Moua	13574 Bisson Pl.	Missoula	MT	59808	
37	Darrell	Arnold	13571 Bison Pl.	Missoula	MT	59808	
38	Mary Ann	Hinshaw	13730 Mullan Rd.	Missoula	MT	59808	
39	Michael	Wood	14400 Mullan Rd.	Missoula	MT	59808	

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41	Darcy	McLean	13571 Bisson Pl.	Missoula	MT	59808	
42	Keith	Steigers	1940 34th Street	Missoula	MT	59801	
43	Dennis	Zemliska	7720 Gowen Ln.	Missoula	MT	59808	
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48	Elizabeth	Kelsey	8100 Gowen Ln.	Missoula	MT	59808	
49	Michael	Gould	PO 863	Frenchtown	MT	59834	
50	Dave	Bush	13455 Moccasin Ln.	Missoula	MT	59808	
51	Dewayne	Atkins	13375 Moccasin Ln.	Missoula	MT	59808	
52	John	Turman	8415 Ruple Ln.	Missoula	MT	59808	
53	Tsibxwm	Moua	8655 Ruple Ln. #12	Missoula	MT	59808	
54	Troy	Westre	8721 Ruple Ln.	Missoula	MT	59808	
55	Vang	Moua	3740 South Ave. W.	Missoula	MT	59804	
56	Carl	Saunders	13690 Mullan Rd.	Missoula	MT	59808	
57	Donna	Thompson	420 Bass Creek Rd.	Stevensville	MT	59870	
58	Timothy	Steigers	7324 Gowen Ln.	Missoula	MT	59808	
59	Bonita	Hintz	7490 Gowen Ln.	Missoula	MT	59808	
60	PA Prospect Corp.		PO 785	Columbus	MT	59019	
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SURFACE LANDOWNERS LIST

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PA Prospect Corp.

Site:

Clark Fork Site

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7	Leonard	Tucket	15100 Harpers Bridge Rd.	Missoula	MT	59808	6/2/2020
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9	MLH Montana LLC		1457 130th Ave. NE	Bellevue	WA	98005	6/2/2020
10	Richard	Babbitt	14800 Harpers Bridge Rd.	Missoula	MT	59808	6/2/2020
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13	David	Jorgensen	14550 Harpers Bridge Rd.	Missoula	MT	59808	6/2/2020
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20	MT Dep. Fish & Wildlife		PO 200701	Helena	MT	59620	6/2/2020
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44	Larry	Henderson	7790 Gowen Ln.	Missoula	MT	59808	6/2/2020
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48	Elizabeth	Kelsey	8100 Gowen Ln.	Missoula	MT	59808	6/2/2020
49	Michael	Gould	PO 863	Frenchtown	MT	59834	6/2/2020
50	Dave	Bush	13455 Moccasin Ln.	Missoula	MT	59808	6/2/2020
51	Dewayne	Atkins	13375 Moccasin Ln.	Missoula	MT	59808	6/2/2020
52	John	Turman	8415 Ruple Ln.	Missoula	MT	59808	6/2/2020
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54	Troy	Westre	8721 Ruple Ln.	Missoula	MT	59808	6/2/2020
55	Vang	Moua	3740 South Ave. W.	Missoula	MT	59804	6/2/2020
56	Carl	Saunders	13690 Mullan Rd.	Missoula	MT	59808	6/2/2020
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FUEL GUIDELINE FOR SPILL PREVENTION & MANAGEMENT **WORKSHEET**

The Opencut Act states that the Department cannot accept a plan of operation unless the plan provides that: the Opencut operation will be conducted to avoid fires; that procedures will be implemented to prevent significant physical harm to the affected land or adjacent land, structures, improvements, or life forms; and that surface water and ground water will be given appropriate protection, consistent with state law, from deterioration of water quality and quantity that may arise as a result of the Opencut operation (82-4-434(2), MCA). This guideline provides the basic requirements that ensure a plan of operation is acceptable for Opencut operations that have storage of fuel, regulated petroleum products, or on-site fueling operations.

A. SITE SPECIFIC INFORMATION

1. **Operator Name:** PA Prospect Corp.
2. **Site Name:** Clark Fork Pit
3. **Opencut Number (if permitted):**
4. **Describe how fuel will be stored or dispensed at this site (check all that apply and display location(s) on site map):**

- ☐ **Mobile Fueling from Tank Vehicle**
☒ **On-Site Fuel Tank:** ☐ **Single Wall or** ☒ **Double Wall**
☒ **Designated fueling area (display on site map)**
☐ **Other:**

5. If required, the Operator should prepare a Spill Prevention, Control and Countermeasure Plan (SPCC Plan). See Section G below.

B. GENERAL

Opencut operations with fuel storage or on-site equipment fueling have the potential for fires and for leaks, spills, and overfills that could contaminate surface water, groundwater, and soil. Human caused fires have become an increasingly significant issue in Montana and the Western United States. Petroleum releases that result in expensive cleanup costs and fines equate to a preventable loss of money from an Opencut mine operation. The information in this guideline is designed to:

- Ensure operators have incentives to improve fuel storage and fueling facilities in order to minimize the likelihood of accidental releases (75-11-301(6), MCA);
- Safeguard and reduce the risk of harm to human health and the environment by preventing spills (82-4-402(2) and 82-4-434(2), MCA);
- Ensure compliance with the codes adopted by the State Fire Marshal for fuel tank storage and fuel dispensing facilities (International Fire Code, Section 5704-Storage and Section 2304-Dispensing Operations adopted in ARM 23.12.402); and
- Ensure an Operator's eligibility for reimbursement up to \$1 million to assist with cleanup and damages caused by an accidental release when fully compliant with the Petroleum Tank Release Compensation (PTRC) Board requirements that pertain to the prevention and mitigation of a petroleum release (75-11-308, MCA and ARM 17.58.326(1)).

Meeting all provisions of the International Fire Code (IFC) that are applicable to stationary above-ground storage tanks should ensure compliance with Applicable Rules Governing the Operating and Management of Petroleum Storage Tanks (ARM 17.58.326), and thereby result in an Operator's eligibility for spill reimbursement. Also, meeting all provisions of the IFC would minimize the risk of fires and the risk of spills from fuel tanks and fuel dispensing, thereby reducing or eliminating potential liability of an Operator.

C. STORAGE

The following storage provisions apply to fixed aboveground storage tanks (ASTs) and to portable tanks with capacity greater than 660 gallons:

1. Protection from vehicle impacts by installation of properly constructed and spaced posts or approved physical barriers.
2. Secondary containment designed to contain spill of largest vessel with:
 - a. Containment wall having minimum 4.6 inches of freeboard, and
 - b. An audible or visual alarm signal for 90% of tank capacity; OR
 - c. Impermeable secondary containment.
3. Resting on the ground or foundations made of concrete, masonry, piling, or steel designed to:
 - a. Minimize the possibility of uneven settling, and
 - b. Minimize corrosion in any part of the tank resting on the foundation.

D. DISPENSING

The following dispensing provisions apply to fixed ASTs and to portable tanks with capacity greater than 660 gallons:

1. An accessible emergency disconnect switch is properly located within 20 to 100 feet to stop the transfer of fuel to the dispensers.
2. Dispensing devices are protected against physical damage and collision damage by secure bolted mounting on a concrete island 6 inches or more in height.
3. Dispensing hoses for gasoline and diesel are equipped with emergency breakaway device to retain liquids.
4. If dispensing hoses are attached to a hose-retrieving mechanism a breakaway device is located between the nozzle and the point of attachment.

E. PIPING

If any tanks have a piping system (e.g. between tanks and asphalt plant) or an underground line connection, then additional requirements apply. See the AST Piping section of the Self-Inspection Checklist. If there is an underground line connected to an AST, registration with DEQ is required at: <http://deq.mt.gov/Land/ust/notificationregist>.

F. SELF-INSPECTION CHECKLIST

The Operator must routinely inspect and maintain fuel tanks to prevent leaks and spills (ARM 17.24.218(1)(i)(ii)). The Department strongly recommends that Operators use the Self-Inspection Checklist to ensure compliance for all ASTs, piping and fuel dispensing at Opencut sites. If an AST is found to be out of compliance at the time a release is discovered, then eligibility for spill reimbursement is denied. If a spill occurs when the site is compliant with all items on the checklist, then an Operator should be eligible for financial assistance with the cleanup and damages caused by an accidental tank release. ASTs are either fully ineligible or eligible for reimbursement up to \$1 million.

The AST checklist is included below and is available from the Petroleum Tank Release Compensation (PTRCB) at:

<http://deq.mt.gov/Portals/112/DEQAdmin/PET/Documents/Forms/StorageTankChecklist.pdf>.

1. How will ASTs be routinely inspected and maintained to prevent leaks and spills at the site:

- ☐ **PTRCB AST Self-Inspection Checklist**
☒ **Operator AST Self-Inspection Checklist**
☐ **Other (Describe):**

G. SPILL PREVENTION, CONTROL, AND COUNTERMEASURE PLAN

If a facility has cumulative above-ground storage capacity of 1,320 gallons or more of regulated liquids, then for water protection, an Operator may be required to prepare and implement a SPCC Plan. It is the Operator's responsibility to determine if the on-site storage of regulated liquids (fuel, asphalt binder, oil, etc.) at the site requires an SPCC Plan. Eligibility for compensation from the PTRC Board is based on, to the extent required, whether an SPCC Plan has been prepared and implemented when the EPA regulation 40 CFR 112.3 is applicable to petroleum tanks at the site.

The National Asphalt Pavement Association has environment, health & safety publications available that may assist in developing an SPCC Plan to ensure compliance: <https://store.asphalt pavement.org/>. Guidance from the EPA and acceptable SPCC formats can be found at: <https://www.epa.gov/oil-spills-prevention-and-preparedness-regulations/spill-prevention-control-and-countermeasure-17>.

If a professional scientist or engineer would be of service, a list of consultants that conduct work in Montana is available at the following link: <http://deq.mt.gov/Land/Lust/consultantlist>.

H. MOBILE FUELING

Mobile fueling from tank vehicles into fuel tanks of motor vehicles or equipment at gravel pits is allowed in accordance with IFC Section 5706.2.8. A tank vehicle, by IFC definition has a mounted or integral cargo tank that is used for transporting fuel and includes self-propelled vehicles and full trailers and semitrailers. Tank vehicles shall not be used as storage tanks (IFC Section 5704.2.2). Fuel dispensing from tank vehicles shall be conducted not less than 50 feet from structures or combustible storage. The following mobile fueling provisions apply to dispensing fuel from tank vehicles:

1. The tank vehicle's specific function is that of supplying fuel to motor vehicle fuel tanks.
2. The dispensing hose does not exceed 100 feet in length.
3. The dispensing nozzle is an *approved* type.
4. The dispensing hose is properly placed on an *approved* reel or in a compartment provided before the tank vehicle is moved.
5. Signs prohibiting smoking or open flames within 25 feet of the vehicle or the point of refueling are prominently posted on the tank vehicle.
6. Electrical devices and wiring in areas where fuel dispensing is conducted are in accordance with NFPA 70.
7. Tank vehicle-dispensing equipment is operated only by designated personnel who are trained to handle and dispense motor fuels.
8. Provisions are made for controlling and mitigating unauthorized discharges.

Petroleum Tank Release Compensation Board

Aboveground **Storage Tank**

Self-Inspection Checklist

		Tank #	Tank#	Tank#	Tank #	Tank #
1	Is the aboveground storage tank (AST) temporary or permanently removed from service? (If yes, notification to the State Fire Marshal's office is required)	YES NO	YES NO	YES NO	YES NO	YES NO
2	Is there an underground line connected to the aboveground storage tank? (If yes, registration with DEQ is required.)	YES NO	YES NO	YES NO	YES NO	YES NO
3a	(i) Is the aboveground tank protected from vehicle impacts by posts constructed of steel not less than 4 inches in diameter and concrete filled? (ARM 17.58.326(1)(a)(i))	YES NO	YES NO	YES NO	YES NO	YES NO
	(ii) Are the guard posts spaced not more than 4 feet between posts on center? (ARM 17.58.326(1)(a)(i))	YES NO	YES NO	YES NO	YES NO	YES NO
	(iii) Are the guard posts set not less than 3 feet deep in a concrete footing of not less than 15-inches in diameter? (ARM 17.58.326(1)(a)(i))	YES NO	YES NO	YES NO	YES NO	YES NO
	(iv) Are the guard posts set with the top of the posts not less than 3 feet above the ground? (ARM 17.58.326(1)(a)(i))	YES NO	YES NO	YES NO	YES NO	YES NO
	(v) Are the guard posts located not less than 3 feet from the protected object? (ARM 17.58.326(1)(a)(i))	YES NO	YES NO	YES NO	YES NO	YES NO
3b	Or is the tank protected by a physical barrier at least 36 inches in height and can resist a force of 12,000 pounds applied 36 inches above the adjacent ground surface? (ARM 17.58.326(1)(a)(i))	YES NO	YES NO	YES NO	YES NO	YES NO
4	Is the secondary containment of the outdoor storage area designed to contain a spill of the largest vessel? (ARM 17.58.326(1)(a)(v))	YES NO	YES NO	YES NO	YES NO	YES NO
5	Does the aboveground tank secondary containment wall have at least 4.6 inches of freeboard? (ARM 17.58.326(1)(a)(v))	YES NO	YES NO	YES NO	YES NO	YES NO
6a	Does the aboveground tank have an audible or visual alarm signal to notify the person filling the tank the fluid level has reached 90 percent of tank capacity no later than December 31, 2013? (ARM 17.58.326(1)(a)(vi)(A))	YES NO N/A	YES NO N/A	YES NO N/A	YES NO N/A	YES NO N/A
6b	Or does the tank have a petroleum impermeable secondary containment designed in accordance with the International Fire Code no later than December 31, 2013? (ARM 17.58.326(1)(a)(vi)(B))	YES NO N/A	YES NO N/A	YES NO N/A	YES NO N/A	YES NO N/A
7	Is the metal tank welded, riveted and caulked, bolted, or constructed using a combination of these methods? (ARM 17.58.326(1)(b)(i))	YES NO	YES NO	YES NO	YES NO	YES NO
8	Is the aboveground tank resting on the ground or on a foundation made of concrete, masonry, piling, or steel? (ARM 17.58.326(1)(b)(ii))	YES NO	YES NO	YES NO	YES NO	YES NO
9	Is the aboveground tank foundation designed to minimize the possibility of uneven settling of the tank and to minimize corrosion in any part of the tank resting on the foundation? (ARM 17.58.326(1)(b)(iii))	YES NO	YES NO	YES NO	YES NO	YES NO
10	If required by 40 Code of Federal Regulations, Section 112.3, do you have a Spill Prevention, Control and Countermeasure Plan? (ARM 17.58.326(1)(e))	YES/ NO/ Not Required				

Petroleum Tank Release Compensation Board

Aboveground **Storage Tank**

Self-Inspection Checklist

		Tank #	Tank#	Tank#	Tank #	Tank #
AST Piping						
1	Is the piping maintained liquid tight? (ARM 17.58.326(1)(b)(iv))	YES NO	YES NO	YES NO	YES NO	YES NO
2	Is the piping joint liquid tight and welded, flanged, threaded or mechanically attached? (ARM 17.58.326(1)(b)(v))	YES NO	YES NO	YES NO	YES NO	YES NO
3	Are the threaded aboveground joints made with a suitable thread sealant or lubricant? (ARM 17.58.326(1)(b)(vi))	YES NO	YES NO	YES NO	YES NO	YES NO
4	Is the aboveground piping system subject to external corrosion protected? (ARM 17.58.326(1)(b)(vii)), (ARM 17.58.326(1)(c)(ii))	YES NO	YES NO	YES NO	YES NO	YES NO
5	Is the piping in contact with the soil properly engineered, installed and corrosion protected? (ARM 17.58.326(1)(c)(i))	YES NO	YES NO	YES NO	YES NO	YES NO
6	Is the aboveground piping substantially supported and protected against physical damage? (ARM 17.58.326(1)(d)(x)(A))	YES NO	YES NO	YES NO	YES NO	YES NO
Dispensers						
1	Is the tank provided with an accessible emergency disconnect switch in an approved location to stop the transfer of fuel to the dispensers in the event of a fuel spill or other emergency? (ARM 17.58.326(1)(a)(ii))	YES NO	YES NO	YES NO	YES NO	YES NO
2	Is the emergency disconnect switch for exterior fuel dispenser located within 100 feet of, but not less than 20 feet from the fuel dispensers? (ARM 17.58.326(1)(a)(ii))	YES NO	YES NO	YES NO	YES NO	YES NO
3	Are the dispensing devices protected against physical damage by mounting on a concrete island six inches or more in height? (ARM 17.58.326(1)(a)(iii))	YES NO	YES NO	YES NO	YES NO	YES NO
4	Are the dispensing hoses for gasoline and diesel equipped with a listed emergency breakaway device designed to retain liquid on both sides of the breakaway point? (ARM 17.58.326(1)(a)(iv))	YES NO	YES NO	YES NO	YES NO	YES NO
5	If the dispensing hoses are attached to a hose-retrieving mechanism, do they have a breakaway located between the hose nozzle and the point of attachment of the retrieval mechanism to the hose? (ARM 17.58.326(1)(a)(iv))	YES NO N/A	YES NO N/A	YES NO N/A	YES NO N/A	YES NO N/A
6	Are the dispensing devices mounted on concrete islands and securely bolted in place and protected against collision damage? (ARM 17.58.326(1)(c)(iii))	YES NO	YES NO	YES NO	YES NO	YES NO
Comments:						

DETERMINING DEPTH TO GROUNDWATER WORKSHEET

The Opencut Mining Act (Act) requires that a Plan of Operation (Plan) provide appropriate protection of surface and groundwater quality and quantity. This document provides direction for Operators regarding methods to establish depth to seasonal high groundwater levels within the proposed permit boundary, as required by ARM 17.24.218(1)(g). Additionally, if it is determined that Opencut operations would result in a surface water feature for a postmining land use, the Plan would include a pond and/or wetland design and follow the requirements of the *Pond Guideline* in addition to this worksheet.

This form includes automated calculations that require Microsoft Word 2010 or newer. As you enter data into this form, auto calculate fields will auto populate (tab out of each field to ensure they auto calculate). Autocalculate fields contain red text. If an autocalculate field is blank, either: a) the required information was not entered, or b) the blank field does not pertain to your application.

A. SITE SPECIFIC INFORMATION

1. Operator Name: **PA Prospect Corp.**
2. Site Name: **Clark Fork Pit**
3. Opencut Number (if permitted): **3170**
4. Proposed Maximum Depth of Mining (must be identical to mine depth in permit/amendment application): **6** feet below ground surface

B. DETERMINING IF A WATER RESOURCE ASSESSMENT BY AN EXPERT IS REQUIRED

This section will help to determine if the Operator would be required to follow the *Groundwater Guideline*. Opencut recommends that the Operator request a Pre-Application meeting by completing the following form: <http://deq.mt.gov/Mining/opencut>. A Pre-Application meeting request prompts an Opencut scientist to contact the Operator to set up an onsite meeting to discuss the specifics of the site and help to determine if the Operator would need to follow the *Groundwater Guideline*. Note that this section must be completed regardless of whether a Pre-Application meeting took place.

Check the box or boxes that apply to the proposed site:

1. Following a Pre-Application Meeting, the Opencut Inspection Report states that the Operator must follow the *Groundwater Guideline*.
☒ Yes ☐ No ☐ NA (explain under additional information below)
 Additional Information (if applicable):
2. There are 10 or more surface landowners within ½ mile of the proposed Opencut permit boundary and Opencut operations would occur into groundwater ☒ Yes ☐ No
 Additional Information (if applicable):
3. Water Wells are located downgradient and within 1,000 ft. of the proposed Opencut site and Opencut operations would occur into groundwater? ☒ Yes ☐ No
 Additional Information (if applicable):
4. There is a public water supply well within 1,000 feet of the proposed permit boundary and operations would occur into groundwater? ☐ Yes ☒ No

Additional Information (if applicable): **There are two public water supply wells approximately 1200 feet southeast of the permit boundary. These wells are located upgradient from the site and are completed in the deep aquifer, therefore will not be effected by the mine.**

If **Yes** to any of the above, refer to the *Groundwater Guideline* and complete the requirements for a *Water Resources Assessment* prior to submittal of an Opencut application. The DEQ *Groundwater Guideline* also outlines requirements for groundwater monitoring and reporting at sites where monitoring is required.

C. **DETERMINING DEPTH TO GROUNDWATER**

The following information assists in:

- Determining and designing appropriate postmining land uses within the proposed permit boundary;
- Identifying the potential for impacts to surface and/or groundwater resources; and
- Determining if a *Water Resources Assessment* would be required prior to submittal/approval of an Opencut application.

The following estimated depths to groundwater are considered preliminary and would be reviewed by Opencut. Ensure documentation submitted supporting estimated groundwater levels is complete, accurate and conclusive as Opencut reserves the right to refute information included in this form if it is not accurately documented.

1. **Choose the method(s) below (minimum of one method must be chosen) that were used to determine seasonal high water levels for this site:**

- a. ☐ **Elevation of Nearby Surface Water:** The elevation of nearby surface water for ponds and potholes, etc., may provide supporting evidence of groundwater elevation if those features are created from groundwater. This method works best for nearby water features that were created by Opencut operations, or if there are prairie potholes containing surface water. This method requires accurate elevation data that establishes the elevation of surface water in existing nearby ponds and/or potholes, as well as the lowest elevation within the proposed permit boundary. It is recommended the elevation data be obtained by surveying the identified features/locations, although other forms of obtaining elevation information may be acceptable if adequate documentation is provided. (i.e. topographic maps, etc.) Provide the following information:
- i. Surface water feature(s) used to determine groundwater levels must be identified and labeled with their elevation on the Area Map and Site Map (if applicable).
 - ii. Enter the lowest elevation of the proposed mine site (i.e. actual surveyed, or other acceptable means of determining pre-disturbance elevation) where mining would occur to the proposed mining depth stated in A-4 above (i.e. **6** feet) and the *Opencut Mining Plan of Operation and Application*.
Lowest Elevation where mining would occur to depth stated in A-4 above = feet
Note: If mining to the depth stated in A-4 above would not occur throughout the entire site, explain in detail here where and to what depth mining would occur at this site:
 - iii. Elevation of nearest applicable (most representative/closest) surface water feature (i.e. prairie potholes, wetlands, springs, etc.):
 feet - **Date Surveyed** (if applicable): **Water Feature (name, type):**
 - iv. Elevation of lowest proposed mining depth (Lowest elevation at site, part ii, minus Maximum depth of mining, part A-4) - **6** feet
 - v. Is the elevation of the lowest proposed mining depth (- **6** feet) lower in elevation or within three feet of the Groundwater Elevation (i.e. elevation of nearby surface water, part iii) (**0** feet)? **If - 6 feet - 0 feet = - 6 feet ≤ 3 feet then check “Yes”** ☐ **Yes** ☐ **No**

If **Yes**, choose the appropriate water feature postmining land use in Section E of the Opencut Mining Plan of Operation and Application. Check the appropriate box on page 2 of the Plan of Operation. Follow and complete the requirements of the *Pond and Wetland Design Worksheet*. Proceed to Section C below.

If **No**, check the appropriate box on page 2 of the *Opencut Mining Plan of Operation and Application* and include this document and all supporting documentation with your application.

vi. Additional information:

- b. ☐ **Well Logs & GWIC Well Data:** Information can be used for existing wells within 1,000 feet of the permit boundary. If no wells are located within 1,000 feet, well data from existing wells further than 1,000 feet from the boundary may be used if they are applicable to the proposed site. In most cases, the wells that are located closest to the site and at the same approximate elevation are the most representative. All well log information used as a basis for water level estimates must also be listed on the Well Information Table in the “Wells” section of the application and the corresponding well logs must be submitted with the permit application. Well logs can be accessed from the “Mapping DEQ’s Data” site located here: <http://deq.mt.gov/Mining/opencut> (click on Mapping DEQ’s Data) tab. Wells displayed online are frequently located incorrectly, so the operator must “ground truth” the actual well locations to ensure applicability of the well log. The actual location of each well used to support the groundwater depth estimates must be displayed on the Area Map.

The Operator must use the closest and most applicable wells when determining seasonal high and low water depths. Up to three wells can be used to determine groundwater depth.

	Well I.D. on Map	Static Water Level (feet)	Ground Elev. of Well	Lineal ft from Permit BNDRY	Water Elevation
Well #1	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	0 feet
Well #2	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	0 feet
Well #3	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	0 feet

- i. Enter the lowest elevation of the proposed mine site (i.e. actual surveyed, or other acceptable means of determining pre-disturbance elevation) where mining would occur to the proposed mining depth stated in A-4 above (i.e. **6** feet) and the *Opencut Mining Plan of Operation and Application*.

Lowest Elevation where mining would occur to depth stated in A-4 above = feet

- ii. Well #1: Lowest elevation of proposed mine site (**0** feet) – mining depth (**6** feet) = a mining elevation of - **6** feet. - **6** feet - **0** feet = - **6** feet.

If- **6** feet \leq 3 feet, then check “Yes” ☐ **Yes** ☐ **No**

- iii. Well #2: Lowest elevation of proposed mine site (**0** feet) – mining depth (**6** feet) = a mining elevation of - **6** feet. - **6** feet - **0** feet = - **6** feet.

If- **6** feet \leq 3 feet, then check “Yes” ☐ **Yes** ☐ **No**

- iv. Well #3: Lowest elevation of proposed mine site (**0** feet) – mining depth (**6** feet) = a mining elevation of - **6** feet. - **6** feet - **0** feet = - **6** feet.

If- **6** feet \leq 3 feet, then check “Yes” ☐ **Yes** ☐ **No**

If **Yes**, to any of the above choose an appropriate water feature postmining land use in Section E of the *Opencut Mining Plan of Operation and Application*, check the appropriate box on page 2, follow and complete the requirements of the *Pond and Wetland Design Worksheet* and proceed to Section C below.

If **No**, check the appropriate box on page 2 of the *Opencut Mining Plan of Operation and Application* and include a copy of this document and all supporting documentation with the application.

v. Additional information:

- c. ☐ **Groundwater Observation/Monitoring Wells:** Groundwater observation/monitoring wells provide a viable method for determining the elevation of groundwater as well as for taking water samples. Refer to **Appendix A – Groundwater Observation Well Installation and Measuring Procedures** for the requirements to allow the use of this method of determining depth to groundwater. Ensure all data and measurements supporting the below information is provided with the application (i.e. Appendix A and other supporting data). Provide the following information:
- The estimated seasonal low water table level measurement (furthest from ground surface, deepest): feet.
 - The estimated seasonal high-water table level measurement (closest to ground surface, shallowest): feet.
 - Estimated seasonal high water table level measurement (0 feet) minus (-) proposed maximum mining (6 feet) depth = (- 6 feet)
Is this number (- 6 feet) \leq 3 feet? ☐ Yes ☐ No

If **Yes**, choose the appropriate water feature postmining land use in Section E of the Opencut Mining Plan of Operation and Application, check the appropriate box on page 2, follow and complete the requirements of the *Pond Guideline* and proceed to Section C below.

If **No**, check the appropriate box on page 2 of the *Opencut Mining Plan of Operation and Application* and include a copy of this document and all supporting documentation with the application.

iv. Additional information:

- d. ☐ **Test Hole Observation:** Field observations by the operator, such as test pit information, may be acceptable in support of groundwater level estimates. Choose the method used at the proposed site and results below:
- ☐ **Groundwater or evidence of groundwater was observed in onsite test holes.** Provide complete test hole information in the permit application supporting the seasonal high and low groundwater estimates.
 - Choose the appropriate water feature postmining land use in Section E of the Opencut Mining Plan of Operation and Application, follow and complete the requirements of the *Pond and Wetland Design Worksheet* and proceed to Section C below.
Additional information:
 - ☐ **Groundwater or evidence of groundwater was not observed in onsite test holes.**
 - Check the appropriate box on page 2 of the *Opencut Mining Plan of Operation and Application*, and include a copy of this document and the required report summarizing test pit results with the application.

The following criteria must be met and included in the report to substantiate groundwater estimates based on this method:

- A minimum of 2-test pits must be located in low areas of the site and the test pits must be completed to a minimum of three feet deeper than the proposed maximum mining depth, and rationale and justification for the selected soil test pit locations must be provided.

- b. Test pits must be located and spaced to provide representative data for the entire proposed permit area, and must include the lowest elevations within the site.
- c. Hire a professional soils expert to conduct a detailed soil profile of each test pit, specifically looking for indications of water (i.e. mottling, redoximorphic features, gleying, water, etc.).
- d. Provide a report summarizing the results and describing how the seasonal high and low water levels were determined. Include a description of topography and how it interacts with the test pit locations and other pertinent supporting information. Complete the Soil Test hole table located in Section C of the permit application.

*Note that this method is only applicable to sites where the groundwater flows through clay or soil and not gravel.

Additional information:

- e. ☒ **Other Methods to Determine Seasonal High and Low Water Levels (explain):**
Depth to groundwater across the site is shown on Depth to Water Maps and Cross Sections contained in the Water Resource Survey. These maps and cross sections identify up to 8 feet of separation between the ground surface and high groundwater. Assuming mining to within 2 feet of the groundwater table, a 6 foot maximum depth of mining is proposed.

NOTE: It is the Operator's responsibility to demonstrate compliance with the water assessment and protection requirements of the Act and Rules. Providing a conclusive and appropriate basis for estimated groundwater levels is required for an application to be determined complete and/or to have meaningful review by DEQ Opencut. Understanding that additional information may be required ahead of time at a specific site, potentially including a *Water Resources Assessment* and/or groundwater monitoring as described in this document and the *Groundwater Guideline*, gives the Operator an opportunity to gather the required data prior to submitting a permit application.

APPENDIX A - GROUNDWATER OBSERVATION WELL INSTALLATION AND MEASURING PROCEDURES

The Operator may be required to provide data identifying the existing water levels through the installation of observation wells and a consistent measurement of those wells in order to accurately determine the postmining land use(s). The observation well plan must be prepared by a competent professional for Opencut to review and include the information listed below. Field data must be accompanied by the names and addresses of the parties that collected and analyzed the data, and must include a description of the methodologies used to gather and analyze the data [ARM 17.24.222(2)].

The plan must include:

- Observation well plan to determine actual seasonal high and low water levels within the proposed permit boundary.
- Installation of a minimum of three (3) groundwater observation wells at the lowest elevations of the site. Refer to “Where to Install” and “Installation Process” sections below for more detailed information.
- Measurement of groundwater for a sufficient period of time to determine a peak and a sustained decline in the groundwater level. Refer to the Observation Schedule below for further guidance.
- A report summarizing observation results including a description of topography, a map showing well locations, well logs, a table summarizing groundwater data collected, and actual seasonal high and low groundwater levels based on the collected data. The report must include total precipitation for the previous year and snowpack equivalent compared to the 30-year historical average. The results must be submitted for analysis and review with the application and prior to permit approval.

Observation Schedule

Observation wells must be installed before or during the time when groundwater levels are highest. This is typically during spring runoff and/or during the irrigation period, but may also occur at some other time during the year. Observation measurements must be made weekly or more frequently during the appropriate periods of suspected high groundwater. Observation measurements must be made at a minimum of once a week for a minimum of four weeks when groundwater is at its highest to accurately determine high groundwater level. More complex sites must include at least two weeks of observation measurements prior to and two weeks of observation measurements after the groundwater peak. Failure to meet these criteria would likely result in the Opencut Section rejecting the results. The applicant is encouraged to submit a Pre-Application Meeting Request to seek guidance on any groundwater observation well plan and installation prior to implementing the plan or submitting a permit application. The monitoring and measurements of the observation wells must be completed by a qualified site evaluator such as a soil scientist, professional engineer, hydrogeologist, or geologist who has experience and knowledge on how to properly take and record measurements from an observation well.

Surface water levels may be indicative of the groundwater levels that could peak several weeks after spring runoff and the irrigation season.

Local conditions may indicate that there is more than one geologic horizon that can become seasonally saturated. Observation wells must be installed to the depth of mining and preferably three feet deeper than the proposed mining depth. The wells should be placed in, but not extended through, the horizon that is to be

monitored.

The Opencut Section may refuse to accept seasonal high groundwater data when the total precipitation for the previous year, defined as May 1 of the previous year to April 30 of the current year, if April 1 snowpack equivalent, measured at the nearest officially recognized observation station, is more than 25 percent below the 30-year historical average. This is based upon the definition of drought conditions created by the National Drought Mitigation Center. The Opencut Section may consider soil morphology and data from nearby groundwater observation sites with similar soil, geology, and proximity to streams or irrigation ditches, if available, to determine seasonal high groundwater elevation during periods of drought.

Where to Install

The observation wells must be installed in locations representative of typical groundwater conditions at the site. At least two of the wells should be in low lying areas of the site and the wells should be spread out to represent conditions across the site. Larger sites or sites with highly variable conditions and/or topography may require the installation of additional wells. Opencut may require additional observation wells if the wells installed by the Operator are not installed properly and/or are not in locations considered representative of the site.

Installation Process

The following criteria must be met for installed observation wells:

- The observation wells must be installed vertically into a dug or drilled hole.
- A slotted water well pipe should be used that is wide enough in diameter to install a measuring device.
- The slotted water well pipe must be installed a minimum of three feet deeper than the proposed mining depth.
- Slotted pipe (PVC is the most common material) with slot sizes between 0.04 and 0.10 inches wide is suggested. Slots should be horizontal and spaced at intervals less than or equal to 0.5 inches. Refer to ARM 36.21.650 for additional information on casing perforations. Alternate well materials are acceptable if they meet the requirements of ARM 36.21.640 (DNRC well casing requirements).
- The pipe must be perforated from 1 foot below the ground surface to 3 feet below the proposed maximum mining depth.
- The casing must be unperforated 1 foot below the ground surface to the top of the observation well. The observation well must extend at least 2 feet above the ground surface.
- The top of the observation well must be sealed with a watertight cap.
- The area around the well must be backfilled with native material to 1 foot below the ground surface.
- The observation well must be sealed in such a manner that prevents surface runoff from running along the outside of the well casing. The well should be sealed from 1 foot below the ground surface to slightly above grade to allow for subsidence and to maintain a positive ground slope away from the well casing. The material used to seal the well can be either fine-grained material or bentonite.
- Each observation well should be flagged to facilitate locating the well and labeled with a well number, operator name, and site name.

Measuring Procedures

Lower a measuring tape or stick to the water level and measure the distance from the water level to the top of the pipe (refer to example on last page). Water levels should be measured to the nearest inch. A plunking device or electronic water sensor can also be used. Data should be submitted in a similar form to that of the example.

Measure the distance from the top of the pipe to the natural ground surface (B distance) (refer to example).

Then measure the distance from the top of the pipe to the water level (A distance) (refer to example). Subtract B from A. This value equals the actual separation between the water table and the natural ground surface.

Decommissioning

If observation wells were installed deeper than 10 feet below the proposed mine depth, the operator may be required to follow the standards in ARM 36.21.810.

Ground Water Observation Results

Monitored By:

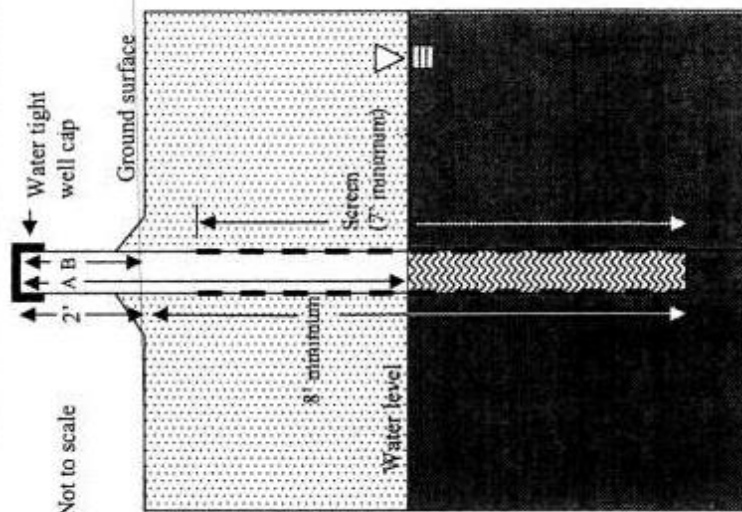
Location :

Section _____ Township _____

Observation Well #

A = Distance to top of casing to the ground water level in pipe (inches).
 Note: If the observation pipe is dry, enter the total depth measured and "dry" in this column.
 B = Distance from top of casing to the natural ground surface (inches).

Ground Water Observation Well Design

[illegible]

Note: Well locations within 1,000 feet of the permit boundary must be shown on the *Site Map* or another map attached to the *Opencut Mining Plan of Operation and Application*.

Permit # (if an amendment):

RCVD VIA ELECTRONIC FTS 2/22/2021



BradyWiggs@gmail.com

Compose

Inbox

1

Starred

Snoozed

Important

Sent

Drafts

Categories

[Gmail]All Mail

Notes

Personal

More

Meet

New meeting

Join a meeting

Hangouts

Sign in

Signing in will sign you into Hangouts
across Google

Fwd: Frenchtown Irrigation District

Inbox

**Brady Wiggs** <bradywiggs@gmail.com>

to me

Hey Charlie is this sufficient for what the DEQ needs for documentation'

Begin forwarded message:

From: Debbie Stenerson <kdac1010@gmail.com>**Date:** December 30, 2020 at 5:52:42 PM MST**To:** Brady Wiggs <bradywiggs@gmail.com>**Subject:** Frenchtown Irrigation District

Hi Brady,

Ed Alexander asked me to email you the following information:

Frenchtown Irrigation District has a 30 foot Operations & Mainten

Let Ed know if you need anything else.

Deb Stenerson

Frenchtown Irrigation District

**Brady Wiggs** <bradywiggs@gmail.com>

to me



MISSOULA ELECTRIC COOPERATIVE

Charlie Johnston

February 6, 2020

RE: Clearance Requirements

Any equipment passing under MEC's powerlines needs to clear the lowest conductor by at least 4.5 ft.

In the case of the rock pit site near Missoula, the lowest set of conductors are 38.5 ft. above the ground allowing for a maximum height of any equipment to be 30 ft. high.

It is also MEC's policy to have a clearance of 10 ft. from any supporting structures such as poles in this case. The proposed access into this pit site would have at least a 30 ft. clearance from equipment passing by the poles.

If you have any other questions, please call me at 541-6338.

Thank you,

Brent L. Evans
Staking Technician

Ground Water Monitoring Plan

Prepared For:

PA Prospect Corporation

Clark Fork Pit

Opencut #3170

SEPTEMBER 2020

Updated FEBRUARY 2021

Operator Contact:

Gerald Nelson
14521 Mullen Road
Missoula, Montana 59802
(406) 322-9951

Prepared by:



PO Box 1113
Bozeman, MT 59718
(406) 587-0721

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Table 1: Initial Analytical Suite (duplicated from DEQ Opencut Groundwater Guideline)

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Figure 1: Vicinity Map

Figure 2: Well Location Map

INTRODUCTION

This report is intended to meet the requirements of the relatively new Groundwater Guidance document under the Department of Environmental Quality's Opencut Mining Division.

The mine will be operated by:

Owner: PA Prospect Corporation
14521 Mullen Road
Missoula, Montana 59802
Contact: Charlie Johnston, (406) 366-0324
or
Gerald Nelson (406) 322-9951

The Clark Fork Opencut Pit site is within the southern portion of the Federal Smurfit-Stone Mill Superfund Boundary, four miles south of Frenchtown along the eastern bank of the Clark Fork River. The site is located north of Fairbanks Lane and west of Mullan Road in Missoula County, Montana in the NE ¼ of Section 25, T14N, R21W. Figure 1 shows a map of the site location in the vicinity.

The mine will not intersect groundwater at the site, therefore groundwater flow direction, quantity or quality of groundwater will not be affected at the site from mining operations. Both surface and groundwater quality are protected from fuel spills through a dedicated fueling area, a comprehensive spill response plan, and a Multi-Sector General Permit for Storm Water.

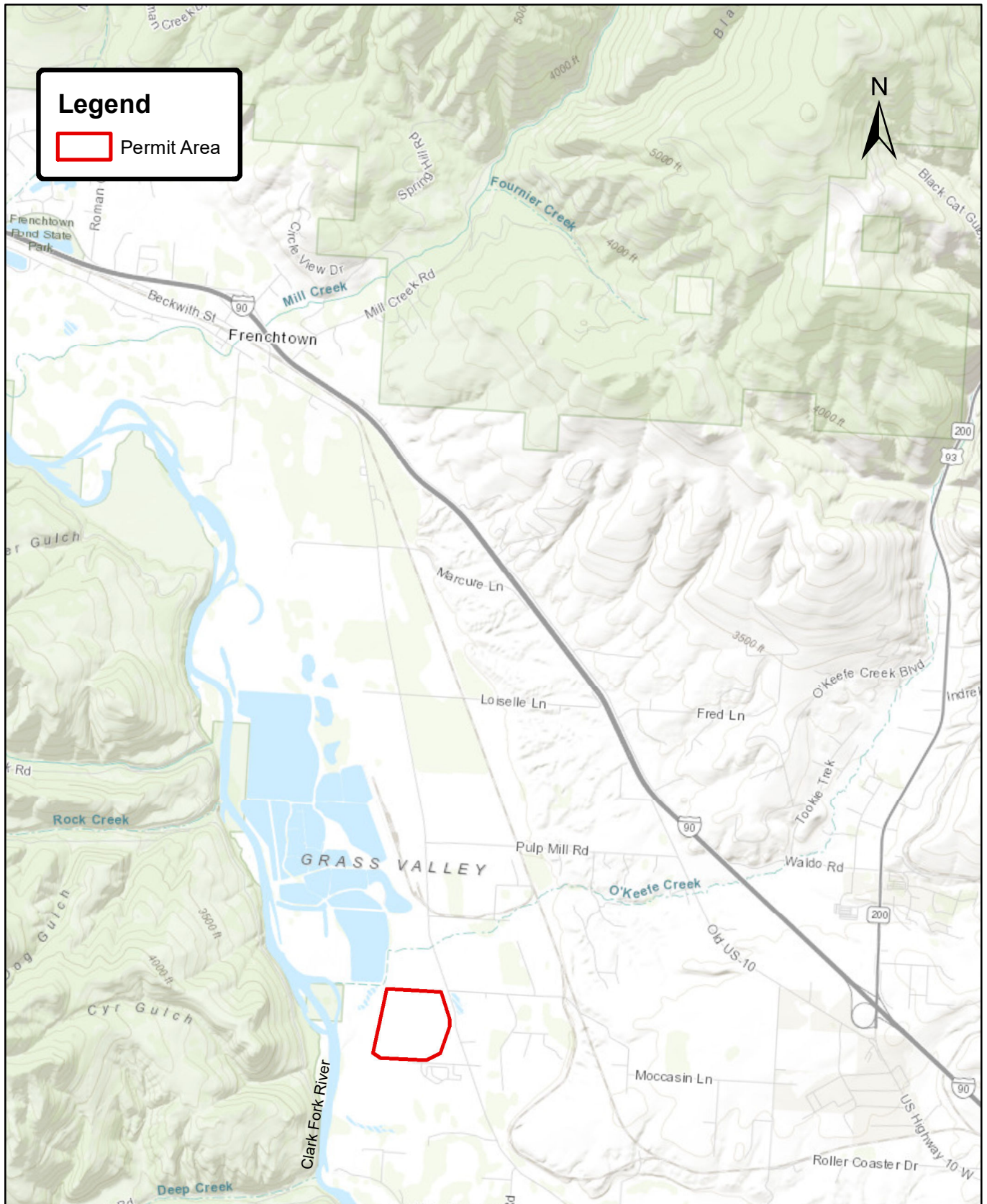
1 MONITORING WELL INSTALLATION

No additional wells will be installed at the proposed site. The existing monitoring wells will provide sufficient hydrogeologic data of the upper aquifer in the shallow alluvium near the proposed site.

2 MONITORING SAMPLING PROCEDURES

Groundwater monitoring wells include ATMW-6, RE-289, RE-288, SMW-20, RE-284, RE-285, SMW-1, CF-1 and CF-2 (Figure 2). Location and construction details are contained in the Water Resource Assessment and in Table 1. Monthly water level measurements and bi-annual water sampling will be performed at the site after permit issuance. During reclamation, the property owners will determine whether these wells will remain for continued monitoring or abandoned following the procedures outlined within.

All water level measurements collected in the field will be referenced to north side of the top of well casing (TOC). Each wellhead will be surveyed for elevation and reported in the NAVD 88 vertical datum. Water level will be measured using an electronic sounding water level indicator that is capable of reading in 0.01-foot increments. The water level indicator will be checked for proper calibration and sounding sensitivity before collection of measurements. Presence of water in the irrigation ditch and pit will be inspected and noted during each measuring event.



0 2,000 4,000 8,000 Feet



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CHK'D BY: PE
APPR. BY: PE
DATE: 4/8/2020

Missoula

VICINITY MAP

MT

PA PROSPECT - CLARK FORK PIT

PROJECT NO.
3465.014

FIGURE NO.
1

Table 1: Monitoring Well Information

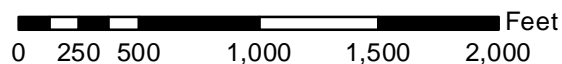
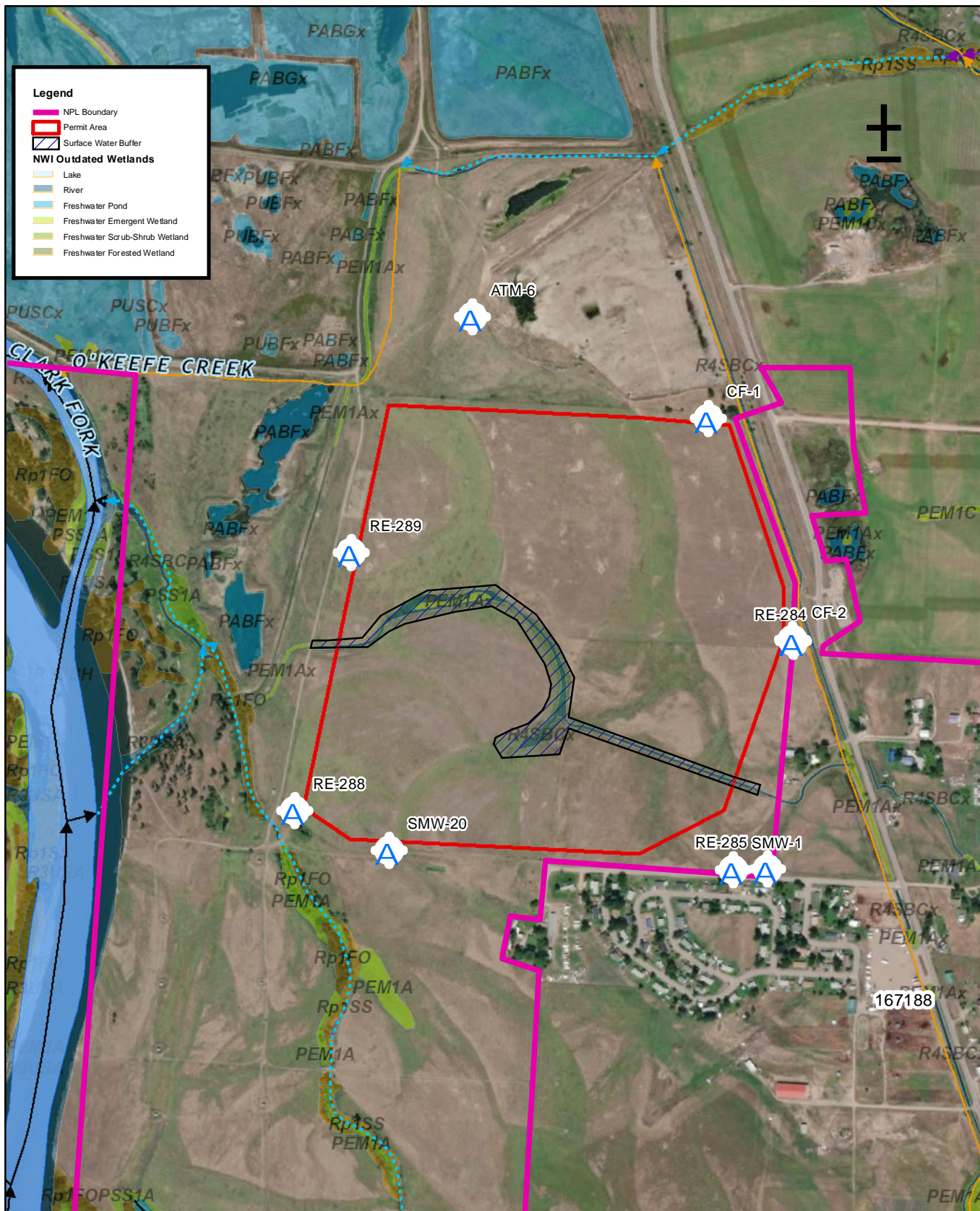
Well ID (GWIC ID)	Latitude	Longitude	Elevation TOC (feet)	Total Depth (feet)	Screen Interval (feet)
ATMW-6	46.95174	-114.20049	3062.45	33	8.3 – 38.3
SWM-1 (125597)	46.94326	-114.19370	3067.74	30	15 – 29.1
SMW-20 (125598)	46.94323	-114.20166	3063.67	28	15.5 - 31.2
RE-284 (71259)	46.94692	-114.19263	3067.69	119	119 - 119
RE-285	46.94331	-114.19290	3065.23	25	Unknown
RE-288	46.94378	-114.20389	3059.76	37	Unknown
RE-289	46.94790	-114.20295	3060.89	25	7.8 - 37.8
CF-1	46.95037	-114.19489	3063.27	30	7-30
CF-2	46.94695	-114-19264	3066.83	30	7-30


Well location data surveyed - Horizontal Datum WGS 84 - Vertical Datum NAVD88

Groundwater monitoring data will be compiled in tabular form and shall include well identification, date water level measurement was collected, water level below TOC and adjusted water level adjusted from TOC to below ground elevation. Any abnormalities shall be noted and reported such as missing cap, damaged casing, well dry, etc. Groundwater elevation data shall also be shown graphically, with historical water level elevation data adjusted to an elevation in the NAVD 88 vertical datum.

Any change in casing elevation shall be recorded. The record will include date and time the casing height adjustment was made and the new elevation of the TOC. New TOC elevation will be surveyed using survey grade GPS or manually surveyed with level and rod from a point of known elevation (level loop). New casing elevation will be recorded on the groundwater monitoring report along with the name of the party that surveyed the well head elevation.

The first sampling event will include wells ATMW-6 RE-289, SWM-20, SWM-1 CF-1, and CF-2. Follow-up (routine) sampling events will occur bi-annually during high and low groundwater elevation. Sampling date will be determined from monthly water level measurement data but will generally be performed in April (low elevation) and July (high elevation). Bi-annual groundwater samples will be collected in wells RE-289, CF-1 and SMW-1. CF-1 and SWM-1 will provide upgradient sampling locations and RE-289 will provide a down-gradient sample.



 <p>engineers • surveyors • planners • scientists</p>	<p>2880 Technology Blvd West Bozeman, MT 59718</p> <p>Phone: (406) 587-0721 Fax: (406) 922-6702</p> <p><small>COPYRIGHT © MORRISON-MAIERLE, INC., 2016</small></p>	<p>DRAWN BY: TM CHK'D BY: PE APPR. BY: PE DATE: 2/14/2021</p>	<p>MISSOULA</p> <p>WELL LOCATION MAP</p> <p>PA PROSPECT - CLARK FORK PIT</p>	<p>PROJECT NO. 6513.001</p> <p>FIGURE NO. 2</p>
--	--	---	--	---

N:\6513\001\ARC\GIS\PA Prospect Well Location Map 9.16.20.mxd

RCVD VIA ELECTRONIC FTS 2/22/2021

Samples will be collected using a submersible pump. All equipment will be properly sanitized and decontaminated before installation of equipment in the hole and between each hole sampled. A minimum of three (3) borehole volumes will be pumped from the well prior to collection of samples. Additionally, pH and Conductivity will be measured at three (3) minute intervals with a field meter until readings stabilize before collection of samples. All samples will be collected in containers supplied by the laboratory, shipped on ice, and will be handled to not exceed hold times for parameters analyzed. Initial sampling event at each well will be analyzed for the constituents shown in Table 2, (DEQ Groundwater Guideline) plus metals including Arsenic, Cobalt, Manganese and Vanadium.

Follow up samples (routine sampling) collected will be analyzed at a certified laboratory for pH, conductivity, EPH and VPH, with sampling events during seasonal low (late spring/summer) and high (late fall/winter) groundwater levels. If the EPH/VPH results are positive for either analyte, the lab will be contacted and asked to verify results and, if present, analyze what constituent accounts for positive indication. A backup sample shall be collected from the well with the positive indication for the EPH/VPH screen at the earliest time possible.

Table 2: Analytical Suite (From DEQ Opencut Groundwater Guideline)

Analyte	Unit	Reporting Limit	Method
EPH Screen ¹	µg/L	300	Montana Method EPH
VPH	µg/L	1	Montana Method VPH
¹ EPH fractionation may be necessary if the EPH screen concentration is >1,000 µg/L TEH.			
Water Quality/Indicator Parameters²			
Total Dissolved solids (TDS)	mg/L	10	A 2540 C
Alkalinity as CaCO ₃ (bicarbonate as HCO ₃ , Carbonate as CO ₃ , and hydroxide as OH)	mg/L	4	A 2320 B
Hardness (Total as CaCO ₃)	mg/L	1	E130.1
Chloride (Cl)	mg/L	1	E300.0
Chemical Oxygen Demand (COD)	mg/L	5	E410.4
Sulfate (SO ₄)	mg/L	1	E300.0
Nitrate + Nitrite as N	mg/L	0.01	E353.2
Sodium (Na)	mg/L	1	E200.7
Calcium (Ca)	mg/L	1	E200.7
Magnesium (Mg)	mg/L	1	E200.7
Potassium (K)	mg/L	1	E200.7
Phosphorus (P)	mg/L	0.005	E365.1
² This list is important during initial sample collection for establishing site background conditions, but may be reduced for subsequent routine sample collection.			

3 GROUNDWATER MONITORING REPORTS

Water level measurements will be sent to the Montana Department of Environmental Quality (MTDEQ) Opencut Division bi-annually. Results will include a copy of monthly tabulations, seasonal high and low water elevations, any adjustments to casing heights, and a graph of water level elevation vs. date for the period of record. Water level measurements will also be shown graphically.

Water quality data will be submitted within 30 days after receipt of laboratory analytical reports for each monitoring event. Submittal will include the field sampling logs, cumulative table of EPH, VPH, pH and ECC along with the complete laboratory report. Any abnormalities in the sampling event and/or laboratory findings will be discussed in report form. In the event EPH or VPH is positive, the laboratory will be contacted, and further analysis completed as advised by the laboratory.

4 WELL ABANDONMENT

Any and all well abandonment will be coordinated with US EPA to ensure no disruption to the Smurfit-Stone Mill Superfund Site's ongoing monitoring. Wells requiring abandonment will be abandoned by a water well contractor licensed in the State of Montana in accordance with Title 36, Chapter 21, ARM and Title 37, Chapter 43, MCA. Well abandonment will follow the abandonment procedures listed below. Following abandonment, a water well log report, fully describing all abandonment procedures, shall be submitted to the Ground Water Information Center (GWIC) of the MBMG within 60 days of abandoning the well.

It is recommended that in all cases where possible the casing be pulled. If the casing and/or screen are removed, the hole shall be filled with sealing material, concrete, or bentonite pellets or chips from the bottom up, as the casing and/or screen is removed. From 6 to 3 feet from the surface, bentonite chips shall be added to the well. The last 3 feet shall be filled with naturally occurring soils.

If the casing and screen are left in place, the casing and screen shall be sealed from the bottom up using a pump and hose or tremie pipe to conduct the sealing material to the bottom of the well or by filling the casing and screen with bentonite pellets or chips placed in a manner that will prevent bridging. Metal casings shall be cut off 3 feet below the ground surface and the last 3 feet backfilled with naturally occurring soils.

Sealing material shall be bentonite pellets or chips, bentonite clay grout, neat cement grout, or concrete. Sealing materials which settle shall be topped to provide a continuous column of grout to within 3 feet of the surface, or; if casing removal is not possible then it will be terminated no less than 3 feet below ground surface. Native fill will be placed, and the land surface restored to a like condition, safe to livestock and humans.

5 SURFACE WATERS

Surface waters adjacent to or within the site include the Clark Fork River, O'Keefe creek, LaValle Creek, and several irrigation ditches. The Clark Fork River runs along the west boundary of the site. Multiple Irrigation ditches boarder the east boundary, with one transecting

the center of the site (contains wetlands). The ditches, ephemeral drainages, and wetlands existing at the site are permitted for a setback equivalent to 50 feet. Water wells within the permitted site are permitted for setbacks of 25 feet.

LaValle Creek and irrigation ditches within and immediately adjacent to the site will be inspected when collecting water level measurements. These surface waters will be recorded as either flowing or not flowing. This will be reported along with groundwater elevations bi-annually.

6 REFERENCES

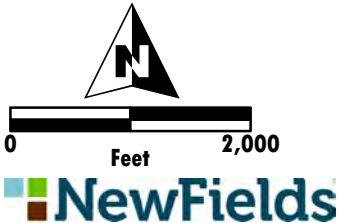
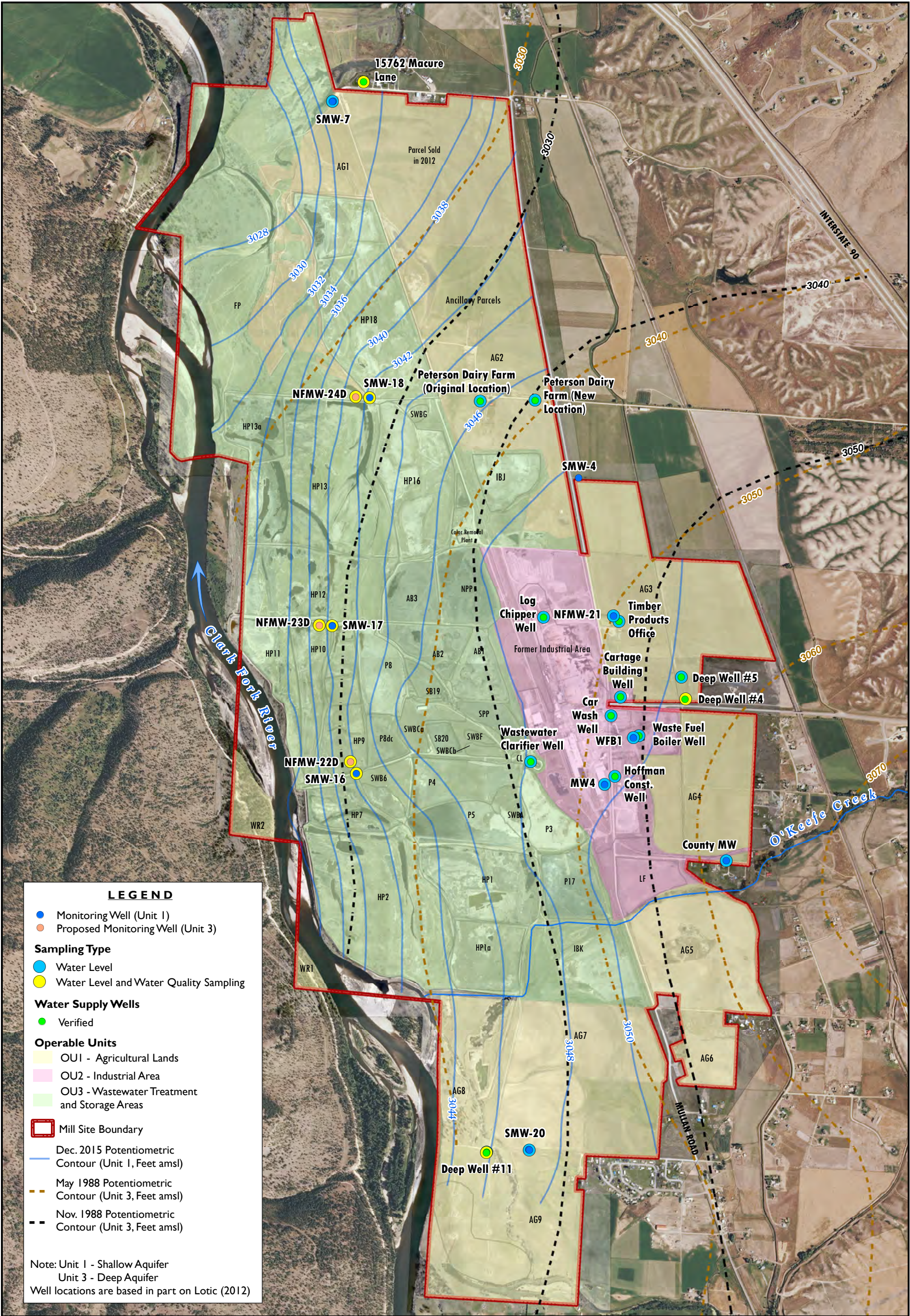
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University of Montana. (1992). *Hydrogeology of the Central and Northwester Missoula Valley*. ScholarWorks at University of Montana.



Aerial Photo Source: NAIP 2011 and Newfields 2016 (Within Site Boundary)

Notes

- | | |
|-----------------------------------|----------------------------|
| AG - Agricultural Land | NPP - North Polishing Pond |
| AB - Aeration Stabilization Basin | P - Settling Pond |
| CL - Clarifier | SB - Spoils Basin |
| FP - Flood Plain | SPP - South Polishing Pond |
| HP - Holding or Storage Pond | SWB - Solid Waste Basin |
| IB - Rapid Infiltration Basin | WR - West of River |
| LF - Landfarm | |

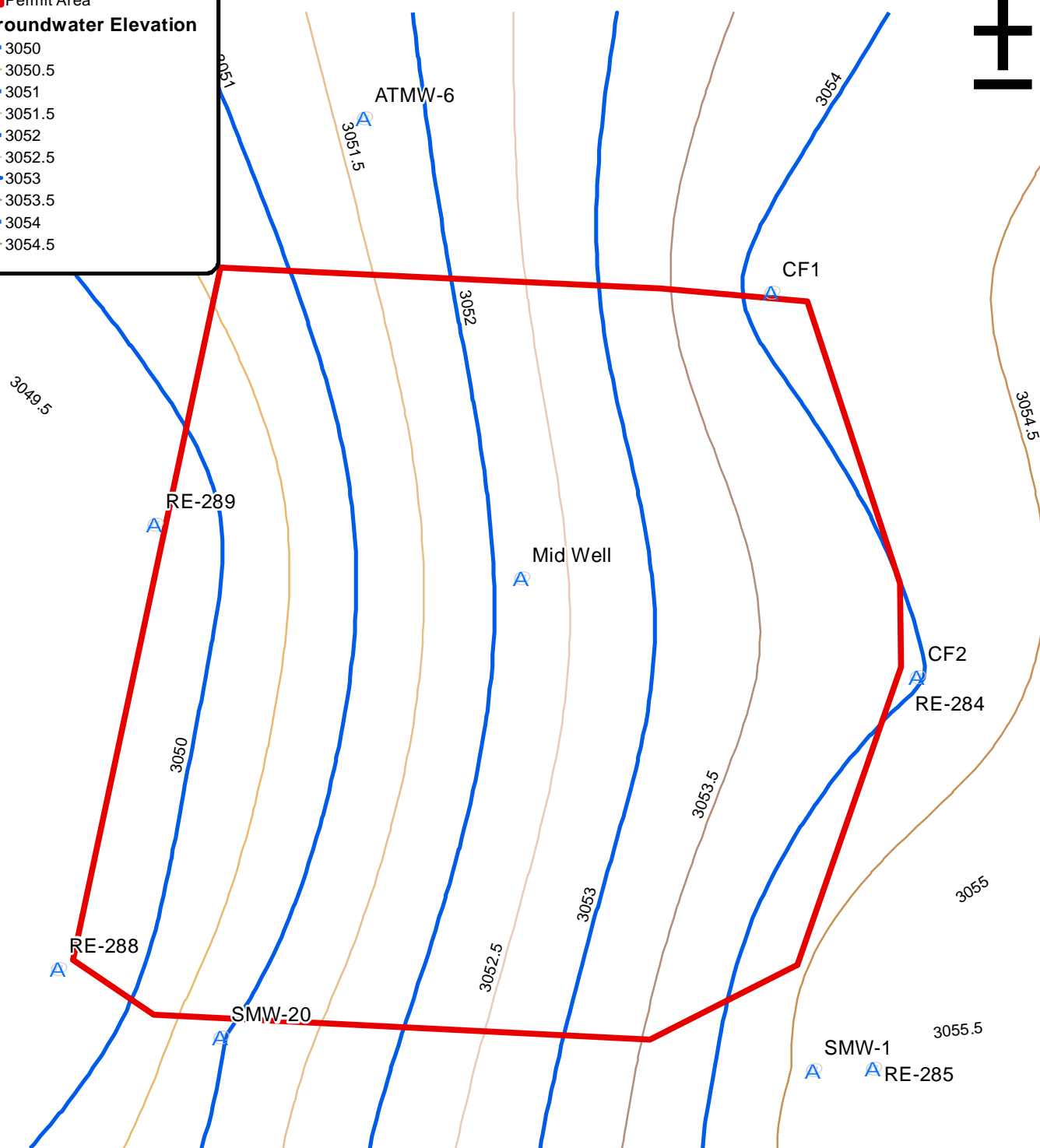
Groundwater Sample Locations
Former Frenchtown Mill Site
Missoula County, Montana
FIGURE 3

Legend

Permit Area

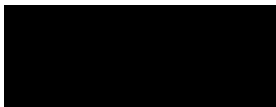
Groundwater Elevation

3050
3050.5
3051
3051.5
3052
3052.5
3053
3053.5
3054
3054.5



Aerial Photograph dated 08/13/2019

0 125 250 500 750 1,000 Feet



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Projected High Groundwater Contours

MISSOULA

MT

PA PROSPECT - CLARK FORK PIT

PROJECT NO.
6513.001

FIGURE NO.
1

RCVD VIA ELECTRONIC FTS 2/22/2021

SEED MIX GUIDELINE - NON SAGE GROUSE HABITAT

The following seed mixes are recommended for Opencut mine site reclamation on Montana's plains, foothills, intermountain valleys, and wetland areas. The use of one of the site-specific seed mixes listed below may be appropriate depending on site conditions, the postmining land use, compatibility with surrounding vegetation, or landowner preference. The drill rates given are based on 12 pounds of pure live grass seed per acre, with an additional 1 to 2 pounds of forbs. The use of the forbs is highly recommended as they will fill the niche usually occupied by noxious weeds and other weedy species. The use of highly competitive introduced grasses, particularly crested wheatgrass and smooth brome, is not recommended unless the area to be seeded is in, or next to, an area where such species are already established. A nurse crop is recommended on highly erodible sites and, if used, should be seeded at 10 lbs/acre. The use of wheat, oat, or barley (in order of preference) is recommended for cover crop and nurse crop seeding.

- The Operator must purchase certified seed on a pure live seed (PLS) basis.
- Contact your local county extension agent or the Natural Resource Conservation Service (NRCS) for assistance with formulating alternative seed mixes.
- The seeding rate must be doubled for broadcast seeding.

NATIVE GRAZING/PASTURE MIX - For general use throughout the state

<u>Species</u>	<u>Lbs PLS/Acre</u>
Slender wheatgrass	2
Western wheatgrass	3
Thickspike wheatgrass	2.5
Bluebunch wheatgrass	2.5
Green needlegrass	2
Western Yarrow*	0.5

NON-NATIVE GRAZING/PASTURE MIX - For general use throughout the state

<u>Species</u>	<u>Lbs PLS/Acre</u>
Intermediate wheatgrass	3
Orchardgrass	3
Timothy	2
Tall Fescue	2
Alfalfa	2

NATIVE RANGELAND MIX - For moist/riparian areas

<u>Species</u>	<u>Lbs PLS/Acre</u>
Mountain brome	2
Bluejoint reedgrass	1
Tufted hairgrass	1
Canada wild rye	2
Western wheatgrass	3
Bluebunch wheatgrass	2
Western yarrow*	1

NATIVE RANGELAND MIX - For arid regions

<u>Species</u>	<u>Lbs PLS/Acre</u>
Slender wheatgrass	1
Thickspike wheatgrass	5
Western wheatgrass	3
Sandbergs bluegrass	2
Prairie junegrass	1
Yellow prairie coneflower*	1

WETLAND SEED MIX - For pond edges throughout the state

<u>Species</u>	<u>Lbs PLS/Acre</u>
Slough grass	2
Basin Wildrye	2
Baltic rush	1
Nebraska sedge	2
Creeping spike rush	2
Beaked sedge	2
Bluejoint reedgrass	1

* - Listed forbs may be substituted for other forb species depending on availability/pricing. Alternative forbs include but are not limited to Purple Coneflower, Yellow Prairie Coneflower, Western Yarrow, Lewis Flax, Rocky Mountain Bee Plant, Scarlet Globemallow, Alfalfa and Prairie Sagewort.



SEED MIX GUIDELINE - SAGE GROUSE HABITAT



The following seed mixes are **REQUIRED** for Opencut mine site reclamation within Sage Grouse General, Interconnectivity and Core Habitat areas; unless a baseline vegetative study is completed by a vegetation specialist using accepted sampling criteria. The Operator must choose the seed mix that is designed for the region that the Opencut mine will be located in. Refer to page 4 of this document for the Sagebrush Seeding Method that must be used with the below seed mixes.

Sagebrush **cannot** be drill seeded and must be broadcast seeded at the rates described below. It may be necessary to broadcast seed sagebrush separately from the other seeds, especially if the other seeds are drill seeded.

- The Operator must purchase certified seed on a pure live seed (PLS) basis.
- The seeding rate must be doubled for broadcast seeding.

NORTHERN REGION SAGEBRUSH SEED MIX

Grasses

Agropyron smithii – Western Wheatgrass

Agropyron dasystachyum – Thickspike wheatgrass

Koeleria cristata – Prairie junegrass

Poa sandbergii – Sandberg bluegrass

Stipa comata – Needle and thread

Lbs PLS/Acre

1.5 for drill seed rate & 3.0 for broadcast

.75 for drill seed rate and 1.5 for broadcast

0.05 for drill seed rate and 0.1 for broadcast

0.25 for drill seed rate and .5 for broadcast

1.25 for drill seed rate and 2.5 for broadcast

Forbs

Achillea millefolium – Yarrow

Artemisia frigida – Fringed sagewort

0.025 for drill seed rate and 0.05 for broadcast

0.025 for drill seed rate and 0.05 for broadcast

Shrubs

Artemisia cana – Silver sagebrush

Artemisia tridentata ssp. Wyomingensis – Wyoming Big Sagebrush

Chrysothamnus nauseosus – Rubber rabbitbrush

5.0 for broadcast rate No Drill Seeding allowed

2.0 for broadcast rate No Drill Seeding allowed

1.0 for drill seed rate and 2.0 for broadcast

Info:

1. The northern region includes the following counties: Blaine, Chouteau, Hill, Liberty Phillips, Roosevelt, and Valley.
2. In general, shrub seed should originate from areas within 300 miles of the project to insure compatibility with local conditions.
3. Seeding grass at a heavier rate than shown is likely to reduce sagebrush establishment.
4. The species described in the seed mix must be used at the rates required.

CENTRAL & SOUTHEASTERN REGIONS SAGEBRUSH SEED MIX

Grasses

Agropyron smithii – Western wheatgrass
Agropyron spicatum – Bluebunch wheatgrass
Agropyron trachycaulum – Slender wheatgrass
Calamovilfa longifolia – Prairie sandreed
Poa sandbergii – Sandberg bluegrass
Schizachyrium scoparium – Little bluestem
Stipa comata – Needle and thread

Lbs PLS/Acre

.75 for drill seed rate & 1.5 for broadcast
.5 for drill seed rate & 1.0 for broadcast
.5 for drill seed rate & 1.0 for broadcast
0.38 for drill seed rate & .75 for broadcast
0.25 for drill seed rate & .5 for broadcast
0.25 for drill seed rate & .5 for broadcast
1.25 for drill seed rate & 2.5 for broadcast

Forbs

Achillea millefolium – Yarrow
Artemisia frigida – Fringed sagewort

0.025 for drill seed rate & 0.05 for broadcast
0.025 for drill seed rate & 0.05 for broadcast

Shrubs

Artemisia cana – Silver sagebrush
Artemisia tridentata ssp. Wyomingensis – Wyoming Big Sagebrush
Chrysothamnus nauseosus – Rubber rabbitbrush

2.0 for broadcast rate No Drill Seeding allowed
3.0 for broadcast rate No Drill Seeding allowed
1.0 for drill seed rate & 2.0 for broadcast

Info:

1. The central and southeastern region includes the following counties: Big Horn, Carbon, Carter, Custer, Dawson, Fallon, Fergus, Garfield, Golden, Judith Basin, McCone, Musselshell, Petroleum, Powder River, Prairie, Rosebud, Stillwater, Treasure, Wibaux, Wheatland, and Yellowstone.
2. In general, shrub seed should originate from areas within 300 miles of the project to insure compatibility with local conditions.
3. Seeding grass at a heavier rate than shown is likely to reduce sagebrush establishment.
4. The species described in the seed mix must be used at the rates required.

SOUTHWESTERN AND SOUTH CENTRAL REGIONS SAGEBRUSH SEED MIX

Grasses

Agropyron smithii – Western wheatgrass
Agropyron spicatum – Bluebunch wheatgrass
Agropyron trachycaulum – Slender wheatgrass
Festuca idahoensis – Idaho fescue
Poa sandbergii – Sandberg bluegrass
Stipa comata – Needle and thread

Lbs PLS/Acre

.5 for drill seed rate & 1.0 for broadcast
1.0 for drill seed rate & 2.0 for broadcast
.5 for drill seed rate & 1.0 for broadcast
0.13 for drill seed rate & 0.25 for broadcast
0.13 for drill seed rate & 0.25 for broadcast
1.0 for drill seed rate & 2.0 for broadcast

Forbs

Achillea millefolium – Yarrow
Dalea purpureum – Purple prairie clover

0.025 for drill seed rate & 0.05 for broadcast
.5 for drill seed rate & 1.0 for broadcast

Shrubs

Artemisia tridentata ssp. Tridentate – Basin big sagebrush
Artemisia tridentata ssp. Vaseyana – Mountain big sagebrush
Chrysothamnus nauseosus – Rubber rabbitbrush

2.0 for broadcast rate No Drill Seeding allowed
2.0 for broadcast rate No Drill Seeding allowed
1.0 for drill seed rate & 2.0 for broadcast

Info:

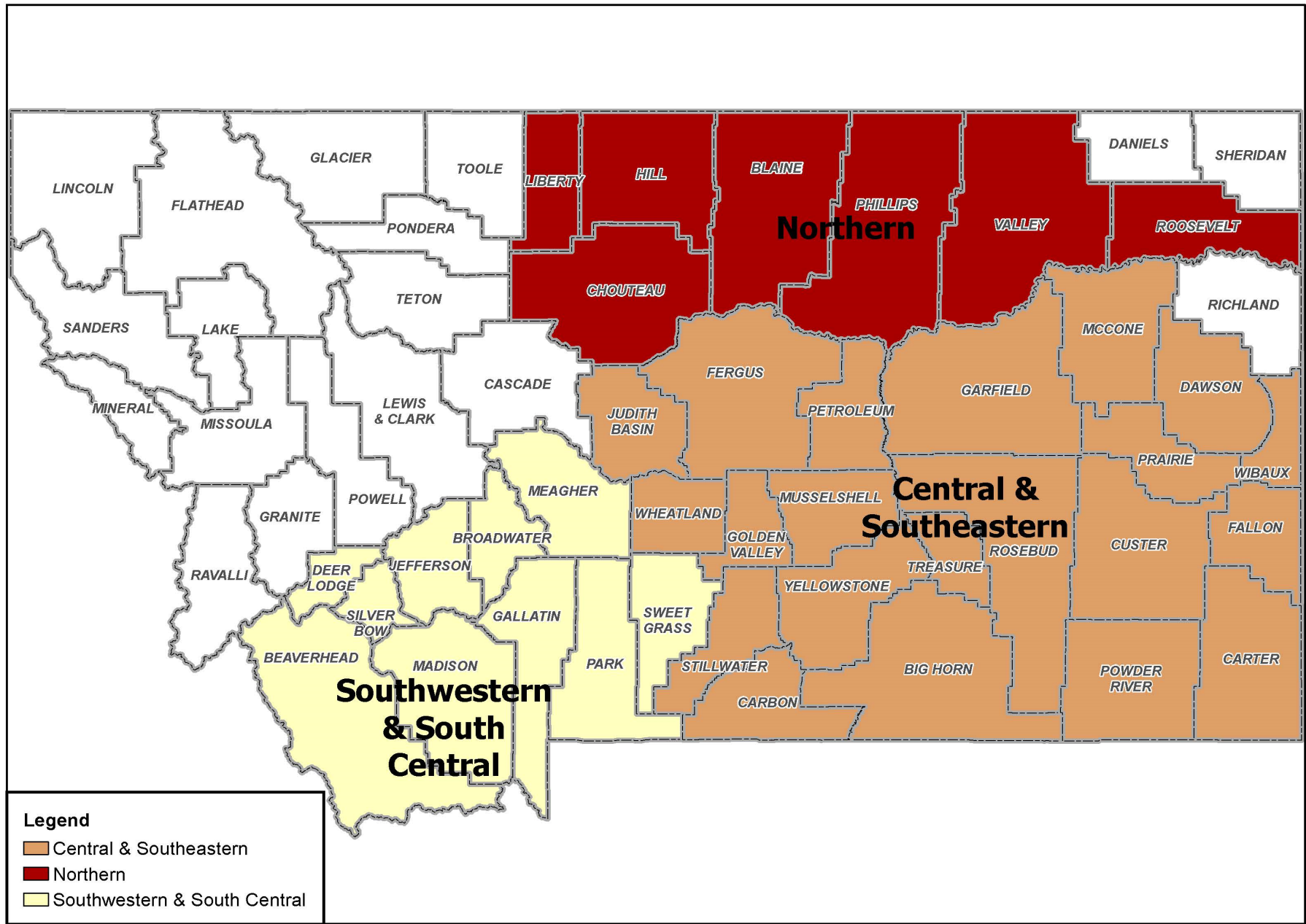
1. The southwestern and south central region includes the following counties: Beaverhead, Broadwater, Deer Lodge, Gallatin, Jefferson, Madison, Meagher, Park, Silverbow, and Sweetgrass.
2. In general, shrub seed should originate from areas within 300 miles of the project to insure compatibility with local conditions.
3. Seeding grass at a heavier rate than shown is likely to reduce sagebrush establishment.
4. The species described in the seed mix must be used at the rates required.



SAGEBRUSH SEEDING METHOD & TIPS



- Broadcast seeding is the best method to seed sagebrush.
- Ensure a relatively firm seedbed; a boot should register in the soil but not sink. If the soil is too hard, sagebrush seed will not establish.
- Sagebrush is to be seeded between October 15 and March 1 in Montana.
- Seeding on snow is an effective means of establishing sagebrush.
- Seeding immediately prior to snow or rain is often effective.
- Do not seed sagebrush seed more than 1/8 inch below the surface.
- Mix sagebrush seed and forb seed with grass seed in a broadcast seeder to prevent clogging. Seeding sagebrush by itself without a carrier, like native wheatgrass seed, is often difficult.
- Broadcast the seed manually or mechanically using cyclone-type bucket spreaders. Mix seed frequently to prevent clogging. Do not use a grain drill.
- Following broadcast seeding, good seed/soil contact must be established. Drag a flexible meadow harrow or a chain over the seeded area.
- Hydraulic seeding equipment (hydro-seeder) can be effective if the seed is applied without any hydro mulch. Sagebrush and other forbs often stick in hydromulch, do not contact the soil, and often do not grow. Apply hydromulch in a second application after seeding.



Sage Grouse Region Map for Seed Mixes

J.J. Conner
3/17/2016
Aerial Photo 2013



Water Resources Assessment

Prepared For:

PA Prospect Corporation

Clark Fork Pit

Opencut #3170

September 2020

Updated February 2021

Updated April 2021

Updated May 2021

Operator Contact:

Gerald Nelson
14521 Mullen Road
Missoula, Montana 59802
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Prepared by:



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Recieved by Opencut FTS 06/01/2021

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Figure 7: Depth to Groundwater

Appendix

Appendix A: Well Logs

Appendix B: Water Quality Reports

INTRODUCTION

This report is intended to meet the requirements of the Water Resource Assessment under the Department of Environmental Quality's Opencut Mining Division.

The mine will be operated by:

Owner: PA Prospect Corporation
14521 Mullen Road
Missoula, Montana 59802
Contact: Charlie Johnston, (406) 366-0324
or
Gerald Nelson (406) 322-9951

The Clark Fork Opencut Pit site is within the southern portion of the Federal Smurfit-Stone Mill Superfund Boundary, four miles south of Frenchtown along the eastern bank of the Clark Fork River. The site is located north of Fairbanks Lane and west of Mullan Road in Missoula County, Montana in the NE ¼ of Section 25, T14N, R21W.

The Missoula Valley is a glacially carved basin between Frenchtown and Missoula, Montana. The valley is surrounded by Precambrian to Cambrian aged bedrock and Tertiary sediments. The valley floor is comprised of Tertiary aged to Quaternary aged basin fill.

The valley is fed by The Clark Fork and Bitterroot Rivers and various creeks. The two rivers merge at the southeast end of the valley. The Missoula Valley is drained solely by the Clark Fork River at the northwest end. Peak aquifer recharge occurs during the late spring and early summer months.

The mine will not intersect groundwater at the site to the maximum depth of mining (6 feet). Therefore, groundwater flow direction, quantity or quality of groundwater will not be affected at the site from mining operations. Both surface and groundwater quality are protected from fuel spills through a dedicated fueling area, a comprehensive spill response plan, and a Multi-Sector General Permit for Storm Water.

1 HYDROGEOLOGIC ASSESSMENT

The project area is underlain by an unconfined alluvial aquifer. The aquifer consists of an upper Quaternary aged alluvial sand and gravel and an underlying Tertiary aged alluvial aquifer that consists of silts, sands, clays, and gravels.

Recharge to the aquifer in immediate area of the site is primarily from infiltration of precipitation and underflow from adjacent areas. Infiltration from surface waters east of the property likely occurs, but is outside of the scope of this report. The groundwater flow direction at the site is reported to flow west-northwest towards the Clark Fork River in several reports by Newfields and is verified by water table contouring provided later in this report.

Monitoring wells, associated within the Federal Superfund Site (formally known as the Smurfit-Stone Mill Superfund Site), are located immediately adjacent to the site. These existing wells (SMW-1, SMW-20, RE-285, RE-288, RE-289, CF1, CF2 and ATMW-6) provide general

groundwater information at the site. Two additional wells, CF1 and CF2, were drilled by the applicant and completed in the shallow alluvial aquifer. Well construction, location water level data follows in Section 3 of the report. Generally, the existing wells indicate that the water table at the site is within 4.65 to 14 feet of the surface depending on seasonal fluctuation and the coarse grained alluvial deposits (gravels) are approximately 50 feet in depth across the site with mainly alluvial sand and clays underlying the gravel.

Well CF-2 is located 10.4 feet north of existing well RE-284. These two wells are a shallow/deep well pair with CF-2 completed to 30 feet within the upper aquifer and RE-284 is finished at 130 feet in the deeper aquifer. One discrete measurement event on 01/20/2021 indicates an upward gradient at the location. This is demonstrated by a difference of 2.21 feet in groundwater elevations with an elevation of 3048.46 feet in CF-2 and an elevation of 3050.67 feet in RE-284. The seasonal fluctuation of gradient between the upper and lower aquifer at this location is unknown.

2 EXISTING WELLS

Monitoring wells, associated with the Smurfit-Stone Mill Superfund Site, are located immediately adjacent to the proposed permit boundary. Figure 1 shows the physical location of public water supply, residential and monitoring water wells located within 1,000 feet of the proposed permit boundary. Table 1 summarizes well log information of wells located within 1,000 feet of the permit area. Existing wells identify clean sand and gravel to depths up to 35 feet in the proposed permitted area. Static water levels in these wells vary depending on time of year and range from 4.65 to 20 feet. There are nine existing monitoring wells near-site; SMW-20, RE-288, RE-289, ATM-6, CF1, CF2, RE-284, RE-285, and SWM 1. Table 2 includes well construction and other information for these nine wells. Groundwater quality data, for SMW-1, SMW-20, RE-289, and ATMW-6, is summarized in Table 3.

In addition to residential and monitoring wells located within 1000 feet of the permit area, the subdivision south of the permit area is supplied by two public water supply wells. The location of the public supply wells is shown on Figure 1. These wells are located approximately 1250 feet upgradient from the permit area. The public well owner is listed as Magnolia Estates, have GWIC IDs 167188 and 167189 and are completed at 150 feet below ground surface. Mining at the site cannot adversely affecting the public water supply wells since the wells are located upgradient of the project site and are completed with deep intakes.

Legend

- EPA - NPL Boundary
- Permit Area
- Surface Water Buffer

NWI Outdated Wetlands

- Lake
- River
- Freshwater Pond
- Freshwater Emergent Wetland
- Freshwater Scrub-Shrub Wetland
- Freshwater Forested Wetland

- FEMADES
- AE
- A

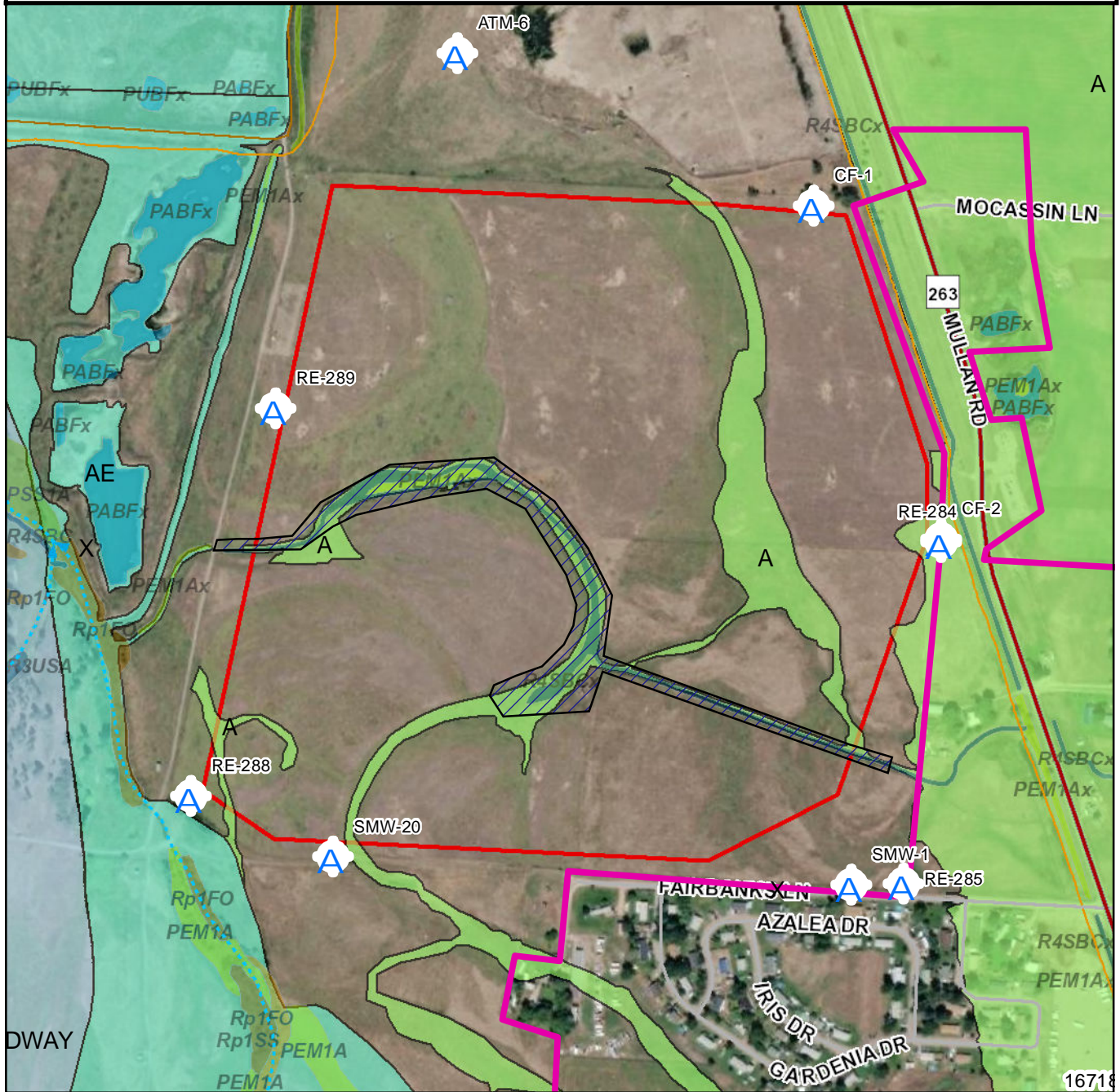
Flowline (with direction)

FCode

- Artificial Path
- Stream/River: Perennial

- Stream/River: Intermittent
- Stream/River: Ephemeral
- Canal Ditch; Canal Ditch: Aqueduct
- Connector

- Pipeline; Pipeline: Aqueduct; 42801; 42802; 42803; 42805; 42807; 42808; 42809; 42810; 42811; 42813
- Underground Conduit



0 150 300 600 900 1,200 Feet

**Morrison
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CHK'D BY: PE
APPR. BY: PE
DATE: 5/23/2021

MISSOULA

WELL LOCATION MAP

MT

PA PROSPECT - CLARK FORK PIT

Received by Opencut FTS 06/01/2021

PROJECT NO.
6513.001

FIGURE NO.
2

Table 1: Existing Wells (Within 1,000 feet of Permitted Boundary)

Well Name (GWIC ID)	Total Depth (feet)	Static Water Level (feet) BGE	Depth of Gravel (feet)	Notes
71259 (RE-284)	126.8	17	23	Clay at 56 feet
RE-285	25	--	--	--
RE-289	25	13.1	7.33	--
71272	100	18	18	Clay at 90 feet
125597 (SMW-1)	30	17.1	30	Balls of pinkish-brown clay from 28 to 30 feet
125598 (SMW-20)	28	17	28	Traces of clay from 9 to 21 feet
155164	110	15	33	Sand and clay from 33 to 100 feet
167188 (Magnolia Estates)	159	21	147	--
167189	148	21	--	--
282161	113	9	20	Silty sands and clay from 20 to 97 feet
ATMW-6	33	--	--	--
706498 (RE-288)	51	--	--	--
167583 (RW-5)	37	16	22	--
CF-1	30	10.60	13	Sand below 13 feet
CF-2	30	14.01	20	Sand below 20 feet

Table 2: Monitoring Wells

Well ID (GWIC ID)	Latitude	Longitude	Elevation TOC (feet)	Total Depth (feet)	Screen Interval (feet)
ATMW-6	46.95174	-114.20049	3062.45	33	8.3 – 38.3
SWM-1 (125597)	46.94326	-114.19370	3067.74	30	15 – 29.1
SMW-20 (125598)	46.94323	-114.20166	3063.67	28	15.5 - 31.2
RE-284 (71259)	46.94692	-114.19263	3067.69	119	119 - 119
RE-285	46.94331	-114.19290	3065.23	25	Unknown
RE-288	46.94378	-114.20389	3059.76	37	Unknown
RE-289	46.94790	-114.20295	3060.89	25	7.8 - 37.8
CF-1	46.95037	-114.19489	3063.27	30	7-30
CF-2	46.94695	-114.19264	3066.83	30	7-30

Well location data surveyed - Horizontal Datum WGS 84 - Vertical Datum NAVD88

3 AQUIFER HYDRAULIC PROPERTIES

The shallow aquifer at the site is an unconfined alluvial aquifer. The upper alluvial aquifer is approximately 50 feet in overall thickness. A Newfields 2017 report titled Addendum No. 3 Version 3 described the upper aquifer (upper 50 feet) as Unit one. They reported that the Hydraulic Conductivity of Unit 1 ranges from 150 to 1400 ft/day. Underlying Unit 2 is likely Tertiary in age and acts as a confining to leaky confining unit with a reported hydraulic conductivity of 20 feet/day. The specific yield of Unit 1 was not reported by Newfields in their testing report, but published values of specific yield in sand and gravel aquifers range from 0.15 to 0.35 (Freeze and Cherry (1979)).

A minimum of monthly water level measurements and bi-annual water sampling will be performed at the site after permit issuance. Groundwater wells to be monitored will include ATMW-6, RE-284, RE-285, RE-288, RE-289, SMW-1, SMW-20, CF-1 and CF-2. Refer to the Ground Water Monitoring Plan for monitoring sampling procedures.

Static water levels in the aquifer have been measured from 4.65 to 14.01 feet below ground elevation in the monitoring well network. Figure 2 identifies depth to groundwater below ground elevation at the site. Wells RE-288 and SWM-20 are located just south and east of the permit area. These wells likely experience greater seasonal water fluctuations due to their proximity to the Clark Fork. Water levels in the other seven groundwater wells are likely more indicative of fluctuations expected within the permit area. The seasonal high appears to have been captured

with the first few measurements in June. Water levels stabilize from mid-June to beginning of August. A groundwater rise was captured with the September 1, 2020 measurements. Water level in the aquifer decline from mid-September through January 20, 2021.

Figure 2: Depth to Groundwater (BGE)

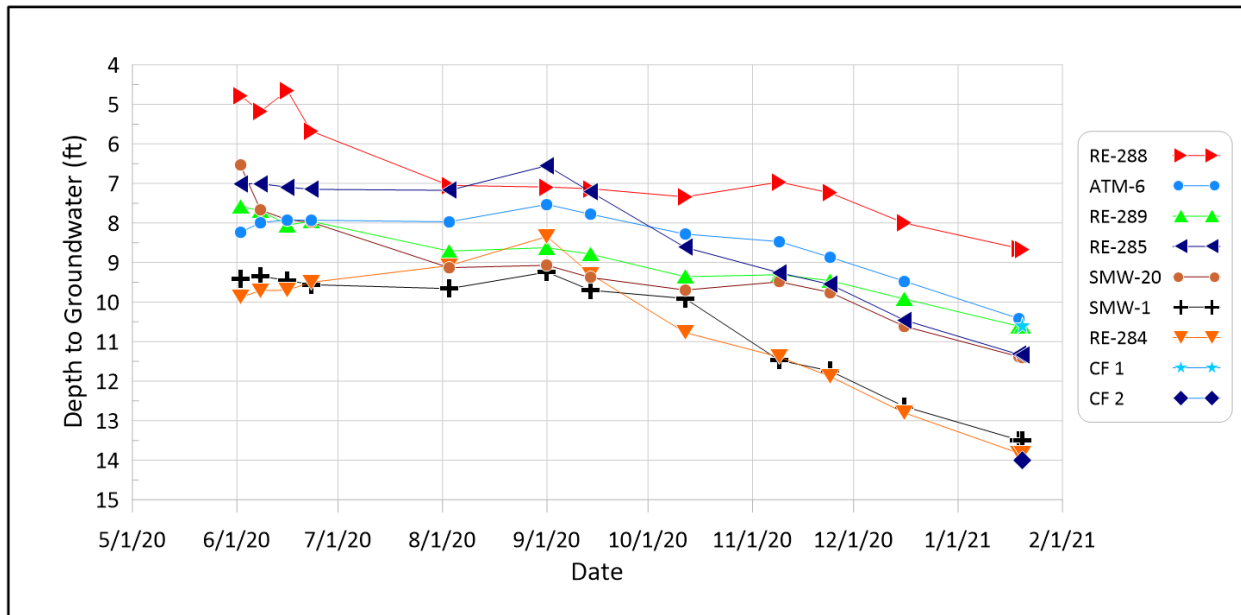


Figure 3: Groundwater Hydrograph – Check to see if CF1 and CF 2 data is correct

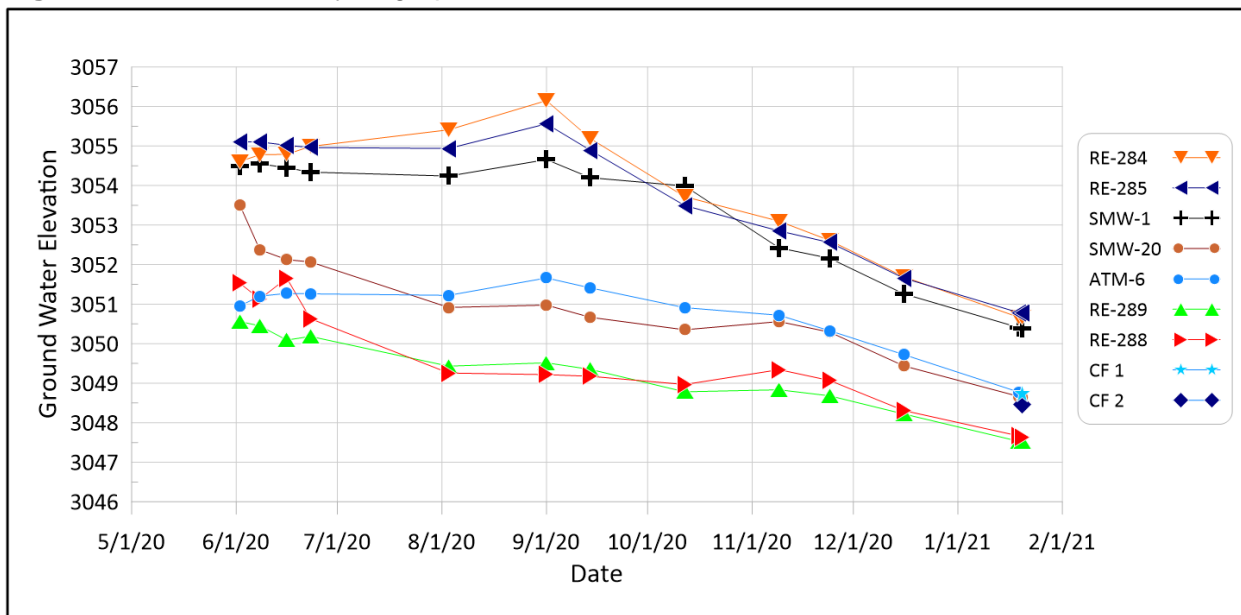
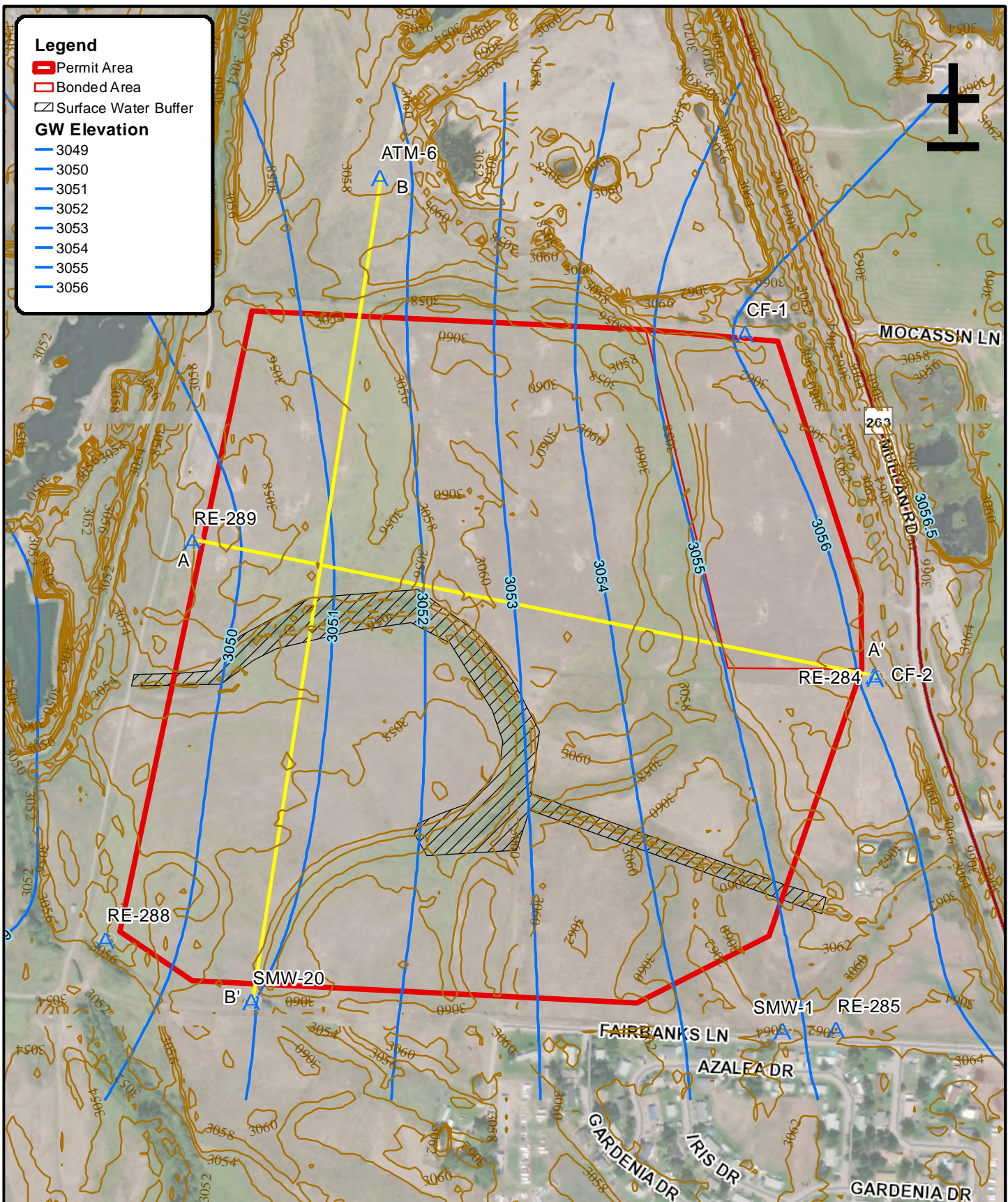


Figure 4 shows a projected high groundwater surface. Water elevation data from 09/01/2020 and estimated water elevations from CF1 and CF2 were used to develop groundwater contours representing high groundwater across the site. The rise in September was chosen as it best represents the high groundwater elevation in the aquifer within the site boundaries. Water elevations in September included all measured wells minus well RE-284 as it is not completed



Aerial Photograph dated 08/13/2019

0 125 250 500 750 1,000 Feet



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DATE: 2/14/2021

Projected High Groundwater Contours
MISSOULA MT

PA PROSPECT - CLARK FORK PIT

Received by Opencut FTS 06/01/2021

PROJECT NO.
6513.001

FIGURE NO.
4

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in the shallow aquifer. High groundwater elevation was projected for wells CF1 and CF2. The projected water elevation for CF1 and CF 2 were calculated as follows

- Measured water elevation differences in wells RE-284, RE-285, and SMW1 from 01/20/21 and 09/01/2021
 - RE-284 = 5.48 feet difference
 - RE-285 = 4.78 feet difference
 - SM-1 = 4.27 feet difference
- Added greatest groundwater elevation difference (5.48 feet) to the 01/21/2021 water elevations reported for CF1 and CF2 to estimate high groundwater elevation in these wells.

Table 4 is the ground water elevation data set used to develop the groundwater surface. The surface demonstrates groundwater flows east to west across the site. A hydraulic gradient was calculated at 0.002 ft/ft from the high groundwater elevation surface.

Table 3: Groundwater elevations used in projected high groundwater surface

Well ID	Ground Water Elevation (feet)	Well ID	Ground Water Elevation (feet)
ATMW-6	3051.66	RE-285	3055.56
RE-289	3049.52	SMW-1	3054.66
RE-288	3049.22	CF2	3056.12
SMW-20	3050.98	CF1	3056.17

Cross-sections of the site were completed to graphically represent site conditions. The first cross section spans between RE-289 (A) and CF-2 (A') as represented in Figure 5, and between ATMW-6 (B) and SMW-20 (B') as represented in Figure 6. The cross sections include well screens, topographic surface, mine floor elevation, high groundwater elevation and groundwater elevation from 01/20/21.

Figure 5: West to East Cross-Section (A-A')

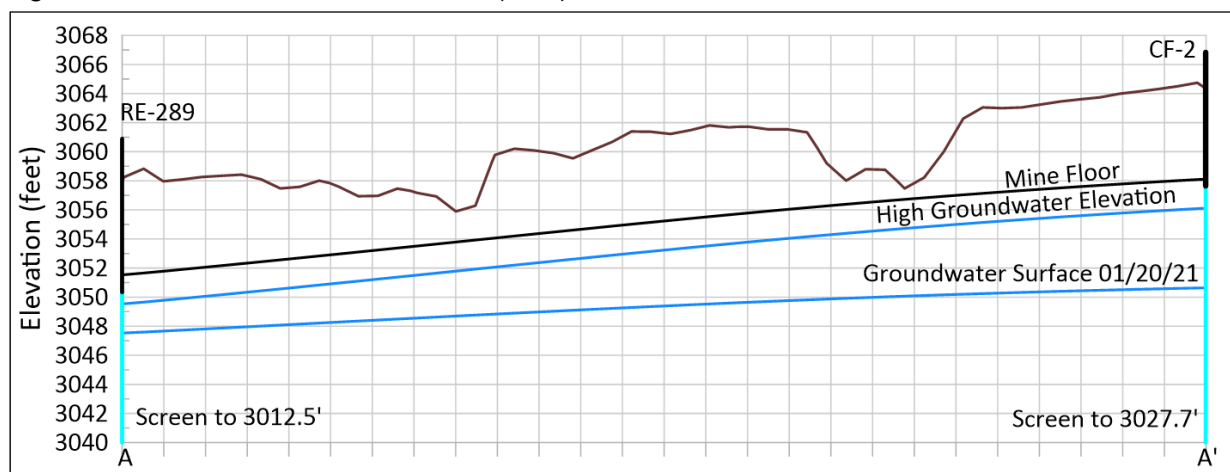


Figure 6: North to South Cross-Section (B-B')

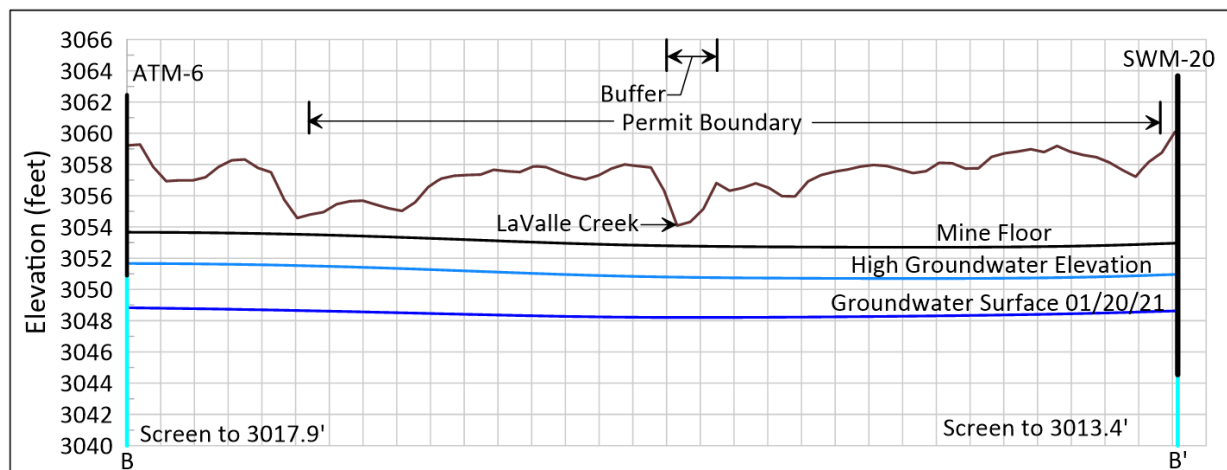


Table 4: Select Groundwater Quality

Sample ID	Sample Date	pH	Specific Conductance ($\mu\text{S}/\text{cm}$)	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (mV)	Turbidity (NTU)
ATMW6	4/14/2014	7.04	955.5	0.24	-76.1	-
	12/15/2015	7.16	795	0.31	-108.7	15.3
	6/2/2016	7.28	599	0.07	-201.8	11
	7/7/2017	7.32	844	0.03	-102.9	5.01
	12/16/2017	6.86	882	0.15	-68.2	4.22
	6/21/2018	6.88	813	0.67	-12.9	0.02
	6/13/2019	7.24	850	0.51	-71.3	3.34
RE-289	12/10/2015	6.89	350	0.29	171.4	22.1
	6/2/2016	6.78	343	1.3	60.2	4.99
	7/7/2017	7.01	345.8	1.69	127.8	4.69
	12/10/2017	6.83	329.5	0.21	128.4	0.02
	6/21/2018	6.62	349.9	1.15	0.2	3.34
	12/11/2018	6.97	345.4	0.29	150.4	1.78
	6/13/2019	7.18	362.2	1.12	242.4	0.43
SMW-1	12/7/2015	6.49	399	3.52	138.4	0.95
	7/7/2017	7.06	427.3	4.43	160.9	0.47
	12/10/2017	6.89	306.9	4.96	128.8	0.02
	6/21/2018	6.99	410.5	3.99	62.1	0.02
	12/11/2018	7.01	347.7	3.6	140	0.33
	6/13/2019	7.14	409	5.39	359.4	0.15
SMW-20	4/14/2014	7.16	392.3	4.71	38.5	-
	12/9/2015	7.01	404	2.08	51.1	1.07

	6/21/2018	7.03	428.7	2.77	60.8	0.02
	12/11/2018	7.05	430.7	3.08	149.4	0.54
	6/13/2019	7.19	434	3.44	347.6	0

Water quality has been reported by both Newfields and Energy Equity Company (ECC). Water was sampled and analyzed by Newfields for multiple parameters, some of which are contained in Table 3, water quality. Additionally, ECC Collected samples from wells on the overall site in 2019. Wells on the property analyzed included SMW-1 SMW20 and RE-289. These results are contained in Appendix B. The water quality analysis indicates the water is classified as Calcium Bicarbonate water. None of the tested water quality constituents exceed the EPA's Primary or Secondary Drinking water standards. Additionally, water in these on-site wells were non-detect for SOC's and VOC's.

4 MINING DEPTH ACROSS SITE

This mining plan allows for a depth of 3 feet or greater to groundwater across the site at final reclamation. A minimum of a 3-foot separation will be maintained between the mine floor and groundwater upon reclamation. Mining depths will decrease across the site from east to west. The maximum depth of mining will be limited to 6 feet below ground surface. Reclamation will include backfill of 1 foot of material to ensure 3-foot of separation between the mine floor and groundwater.

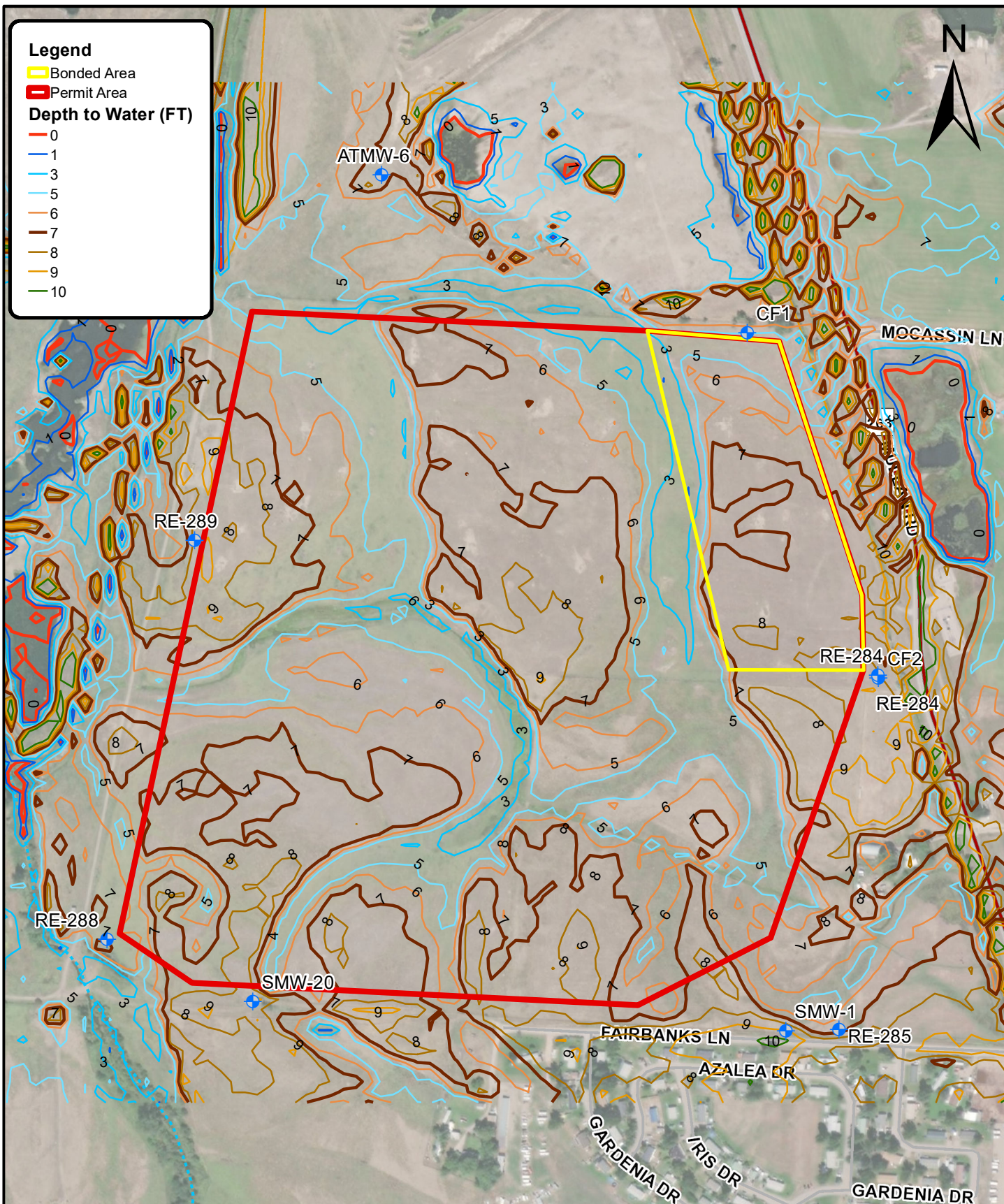
The cross-sections demonstrate that there is up to 8 feet of separation between high groundwater and the ground surface. The 6-foot maximum mining depth will ensure the 2-foot separation between groundwater and the mine floor is maintained.

Figure 7 is a depth to groundwater water map of the site. This map was compiled using groundwater elevation data from the existing on-site wells (Table 4) and ground surface elevation data. Ground surface elevation data was obtained from publicly available LIDAR data. Lidar data was processed in Golden Software SURFER program to produce the topographic surface. The high groundwater surface was subtracted from the topographic surface to process the depth to groundwater map in Surfer. This map can be updated in 2021 as water level measurements are collected, but the map shows conservative estimates of groundwater depth in the proposed bonded area.

Opencut mining activities will begin at the northeast corner of the site and advance to the west-southwest. During this time, water level measurements of on-site wells will be collected and referenced to ground level to ensure mining does not intercept groundwater. Water will be trucked in from off-site for dust control purposes.


5 SURFACE WATERS

Surface waters adjacent to or within the site include the Clark Fork River, O'Keefe creek, LaValle Creek, and several irrigation ditches. The Clark Fork River runs along the west boundary of the site. High flows with flooding potential for O'Keefe creek, LaValle creek, and the Clark Fork River occurs in the spring and early summer months as a result of snowmelt and/or



Aerial Photograph dated 08/13/2019

0 125 250 500 750 1,000 Feet

 <div>Morrison Maierle <small>engineers • surveyors • planners • scientists</small></div>	2880 Technology Blvd West Bozeman, MT 59718 Phone: (406) 587-0721 Fax: (406) 922-6702 <small>COPYRIGHT © MORRISON-MAIERLE, INC., 2020</small>	DRAWN BY: <u>NPE</u> CHK'D BY: <u>NPE</u> APPR. BY: <u>NPE</u> DATE: <u>2/11/2021</u>	Depth to High Groundwater Map		PROJECT NO.
			MISSOULA	MT	6513.001
			PA PROSPECT - CLARK FORK PIT		FIGURE NO.
			7		

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rainfall runoff. The FEMA Flood Insurance Study reports the 100-year flood at 67,600 cfs, and floods exceeding 50,000 cfs have been documented four times in the last 85 years. The 100 year floodplain data is shown on Figure 1. Multiple Irrigation ditches boarder the east boundary, with one transecting the center of the site (contains wetlands). The ditches, ephemeral drainages, and wetlands existing at the site are permitted for a setback equivalent to 50 feet.

6 FINDINGS

Groundwater and surface water resources at the proposed Clark Fork opencut site are protected by the mining plan. The site can be mined to a maximum depth of 6 feet across the site, although some areas water will be encountered at depths shallower than 6-feet. Mining should progress across the site by excavating to a mine floor elevation that is two feet higher in elevation than the groundwater contours as shown on Figure 4 of this report. This could be accomplished through staking of the mine floor in front of mining operations or by using machine controls. In the event groundwater is encountered, clean overburden stripped from the site should be placed to ensure a minimum of 2 feet of separation between the mine floor and groundwater table.

The site is located within the Smurfit-Stone Superfund site. Through careful mining practices, safe fueling practices and protection of surface waters using buffers the groundwater underlying the site will not be disturbed by the proposed land use. As the groundwater is undisturbed following this mining plan and there is no planned groundwater use within the site groundwater conditions within the current Smurfit Stone boundary cannot be affected by the operation.

7 REFERENCES

Energy Equity Company, 2019 Environmental Investigation Report.

Freeze, R.A. and Cherry, J.A. (1979), *Groundwater*. Hempstead: Prentice-Hall International. 604 pp.

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NewFields Companies, LLC. (2017). Addendum No.3 (Version #). Remedial Investigation Work Plan – Deep Groundwater Sampling. Former Frenchtown Mill Site, Missoula County, Montana.

NewFields Companies, LLC. (2018). *Smurfit-Stone/Frenchtown Mill Site Groundwater Data Summary Report*. Missoula, Montana.

University of Montana. (1992). *Hydrogeology of the Central and Northwestern Missoula Valley*. ScholarWorks at University of Montana.

7 APPENDIX A – WELL LOGS

Other Options

[Go to GWIC website](#)
[Plot this site in State Library Digital Atlas](#)
[Plot this site in Google Maps](#)

Section 7: Well Test Data

Total Depth: 35
Static Water Level:
Water Temperature:

1) PA PROSPECT - CF1 (MAIL)
P.O. BOX 785
COLUMBUS MT 59019 [01/19/2021]

2) PA PROSPECT - CF1 (WELL)
MULLAN ROAD
MISSOULA MT N/A [01/19/2021]

** During the well test the discharge rate shall be as uniform as possible. This rate may or may not be the sustainable yield of the well. Sustainable yield does not include the reservoir of the well casing.*

Section 8: Remarks

Township	Range	Section	Quarter Sections	
14N	21W	25	NW¼ NE¼	
County		Geocode		
MISSOULA				
Latitude	Longitude	Geomethod	Datum	
46.950386	-114.194828	SUR-GPS	WGS84	
Ground Surface Altitude		Ground Surface Method	Datum	Date
Addition	Block		Lot	

Section 9: Well Log

MONITORING (1)

Geologic Source

Drilling Method: SONIC RIG
Status: NEW WELL

Unassigned

Date well completed: Tuesday, January 19, 2021

Section 6: Well Construction Details

Borehole dimensions

From	To	Diameter
0	35	6

Casing

From	To	Diameter	Wall Thickness	Pressure Rating	Joint	Type
-2.5	2.5	6	0.25		WELDED	A53B STEEL
-2	7	2			THREADED	PVC-SCHED 40

Completion (Perf/Screen)

From	To	Diameter	# of Openings	Size of Openings	Description
7	30	2		.020	FACTORY SLOTTED

Annular Space (Seal/Grout/Packer)

From	To	Description	Cont. Fed?
0	6	3/8 CHIPS	
6	35	10/20 SAND	

Driller Certification

All work performed and reported in this well log is in compliance with the Montana well construction standards. This report is true to the best of my knowledge.

Name: LARRY PHILLIPS
Company: OKEEFE DRILLING CO
License No: MWC-704
Date Completed: 1/19/2021

Other Options

[Return to menu](#)
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[Plot this site in Google Maps](#)

Section 7: Well Test Data

Total Depth: 35
Static Water Level:
Water Temperature:

1) PA PROSPECT - CF2 (MAIL)
P.O. BOX 785
COLUMBUS MT 59019 [01/18/2021]

2) PA PROSPECT - CF2 (WELL)
MULLAN ROAD
MISSOULA MT N/A [01/18/2021]

** During the well test the discharge rate shall be as uniform as possible. This rate may or may not be the sustainable yield of the well. Sustainable yield does not include the reservoir of the well casing.*

Section 8: Remarks

Township	Range	Section	Quarter Sections	
14N	21W	25	SW¼ NE¼	
County		Geocode		
MISSOULA				
Latitude	Longitude	Geomethod	Datum	
46.944328	-114.193972	SUR-GPS	WGS84	
Ground Surface Altitude		Ground Surface Method	Datum	Date
Addition	Block		Lot	

Section 9: Well Log

Geologic Source

Unassigned

[illegible]

MONITORING (1)

Drilling Method: SONIC RIG
Status: NEW WELL

Date well completed: Monday, January 18, 2021

Borehole dimensions

From	To	Diameter
0	35	6

Casing

From	To	Diameter	Wall Thickness	Pressure Rating	Joint	Type
-2.5	2.5	6	0.25		WELDED	A53B STEEL
-2	7	2		40.0	THREADED	PVC-SCHED 40

Completion (Perf/Screen)

From	To	Diameter	# of Openings	Size of Openings	Description
7	30	2		.020	FACTORY SLOTTED

Annular Space (Seal/Grout/Packer)

From	To	Description	Cont. Fed?
0	5	3/8 CHIPS	
5	35	10/20 SAND	

Driller Certification

All work performed and reported in this well log is in compliance with the Montana well construction standards. This report is true to the best of my knowledge.

Name: LARRY PHILLIPS

Company: OKEEFE DRILLING CO

License No: MWC-704

Date Completed: 1/18/2021

MONTANA WELL LOG REPORT**Other Options**

This well log reports the activities of a licensed Montana well driller, serves as the official record of work done within the borehole and casing, and describes the amount of water encountered. This report is compiled electronically from the contents of the Ground Water Information Center (GWIC) database for this site. Acquiring water rights is the well owner's responsibility and is NOT accomplished by the filing of this report.

[Return to menu](#)
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[View scanned well log \(11/7/2008 4:10:31 PM\)](#)

Site Name: BLOCK WARREN
GWIC Id: 71259

Section 7: Well Test Data

Total Depth: 126.8
 Static Water Level: 17
 Water Temperature:

Section 1: Well Owner(s)

1) BLOCK, WARREN (MAIL)
 5750 LAVOIE
 MISSOULA MT 59802 [07/14/1989]

Air Test *

100 gpm with drill stem set at feet for 1 hours.
 Time of recovery hours.
 Recovery water level feet.
 Pumping water level 60 feet.

Section 2: Location

Township	Range	Section	Quarter Sections	Geocode
14N	21W	25	NE¼	
County				

MISSOULA

Latitude	Longitude	Geomethod	Datum
46.946795	-114.193197	TRS-SEC	NAD83
Ground Surface Altitude	Ground Surface Method	Datum	Date

Addition	Block	Lot
COS 2281		

Section 3: Proposed Use of Water

DOMESTIC (1)

Section 4: Type of Work

Drilling Method: FOWARD ROTARY
 Status: NEW WELL

Section 5: Well Completion Date

Date well completed: Friday, July 14, 1989

Section 6: Well Construction Details

There are no borehole dimensions assigned to this well.

Casing

From	To	Diameter	Wall Thickness	Pressure Rating	Joint	Type
-1.5	126.8	6				

Completion (Perf/Screen)

From	To	Diameter	# of Openings	Size of Openings	Description
126.8	126.8	6			OPEN BOTTOM *

Annular Space (Seal/Grout/Packer)

From	To	Description	Cont. Fed?
0	20	BENTONITE	

Section 8: Remarks**Section 9: Well Log****Geologic Source**

112ALVM - ALLUVIUM (PLEISTOCENE)

From	To	Description
0	17	CLAY SAND AND GRAVEL
17	23	SAND GRAVEL AND WATER
23	56	SAND AND WATER
56	67	CLAY
67	94	SAND AND WATER
94	99	CLAY
99	122	SAND AND WATER
122	125	CLAY
125	126.5	SAND GRAVEL AND WATER

Driller Certification

All work performed and reported in this well log is in compliance with the Montana well construction standards. This report is true to the best of my knowledge.

Name:
Company: CAMP WELL DRILLING
License No: WWC-7
Date Completed: 7/14/1989

MONTANA WELL LOG REPORT**Other Options**

This well log reports the activities of a licensed Montana well driller, serves as the official record of work done within the borehole and casing, and describes the amount of water encountered. This report is compiled electronically from the contents of the Ground Water Information Center (GWIC) database for this site. Acquiring water rights is the well owner's responsibility and is NOT accomplished by the filing of this report.

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[View scanned published report \(5/27/2010 2:40:19 PM\)](#)
Site Name: STONE CONTAINER**GWIC Id: 706498****Section 7: Well Test Data**

Total Depth: 51

Static Water Level:

Water Temperature:

Section 1: Well Owner(s)**Section 2: Location**

Township	Range	Section	Quarter Sections	
14N	21W	25	SW¼	NE¼ SW¼ NW¼
County			Geocode	
MISSOULA				
Latitude	Longitude	Geomethod	Datum	
46.945	-114.203888888889	MAP	NAD27	
Ground Surface Altitude	Ground Surface Method	Datum	Date	
3058	MAP			
Measuring Point Altitude	MP Method	Datum	Date Applies	
3058			9/14/1971	
Addition	Block	Lot		

Unknown Test Method *

Yield _ gpm.

Pumping water level _ feet.

Time of recovery _ hours.

Recovery water level _ feet.

** During the well test the discharge rate shall be as uniform as possible. This rate may or may not be the sustainable yield of the well. Sustainable yield does not include the reservoir of the well casing.*

Section 3: Proposed Use of Water

UNUSED (1)

Section 4: Type of Work

Drilling Method: ROTARY

Status: NEW WELL

Section 5: Well Completion Date

Date well completed: Monday, December 5, 1966

Section 6: Well Construction Details

There are no borehole dimensions assigned to this well.

Casing

From	To	Diameter	Wall Thickness	Pressure Rating	Joint	Type
-4	50	6				STEEL

There are no completion records assigned to this well.

Annular Space (Seal/Grout/Packer)

There are no annular space records assigned to this well.

Section 8: Remarks**Section 9: Well Log****Geologic Source**

Unassigned

Lithology Data

There are no lithologic details assigned to this well.

Driller Certification

All work performed and reported in this well log is in compliance with the Montana well construction standards. This report is true to the best of my knowledge.

Name:**Company:** LIBERTY DRILLING & PUMP CO**License No:** -**Date Completed:** 12/5/1966

Other Options

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Section 7: Well Test Data

Total Depth: 100
Static Water Level: 18
Water Temperature:

Air Test *

75 gpm with drill stem set at feet for 2 hours.
Time of recovery hours.
Recovery water level feet.
Pumping water level 28 feet.

Time of recovery hours.

Recovery water level feet.

Pumping water level 28 feet.

** During the well test the discharge rate shall be as uniform as possible. This rate may or may not be the sustainable yield of the well. Sustainable yield does not include the reservoir of the well casing.*

Addition	Block	Lot
----------	-------	-----

Section 8: Remarks

Section 9: Well Log

Geologic Source

112ALVM - ALLUVIUM (PLEISTOCENE)

[illegible]

Date well completed: Wednesday, October 14, 1987

Driller Certification

There are no borehole dimensions assigned to this well.

Casing

From	To	Diameter	Wall Thickness	Pressure Rating	Joint	Type
-1.5	100	6				STEEL

Completion (Perf/Screen)

From	To	Diameter	# of Openings	Size of Openings	Description
100	100	6			OPEN BOTTOM *

Annular Space (Seal/Grout/Packer)

From	To	Description	Cont. Fed?
0	15	BENTONITE	

All work performed and reported in this well log is in compliance with the Montana well construction standards. This report is true to the best of my knowledge.

Name:
Company: CKC
License No: WWC-185
Date Completed: 10/14/1987

Other Options

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Section 7: Well Test Data

Total Depth: 30
Static Water Level: 17.1
Water Temperature:

Unknown Test Method *

Yield _ gpm.
Pumping water level _ feet.
Time of recovery _ hours.
Recovery water level _ feet.

** During the well test the discharge rate shall be as uniform as possible. This rate may or may not be the sustainable yield of the well. Sustainable yield does not include the reservoir of the well casing.*

Section 8: Remarks

Addition	Block	Lot
----------	-------	-----

Section 9: Well Log

Geologic Source

111ALVM - ALLUVIUM (HOLOCENE)

[illegible]

Driller Certification

All work performed and reported in this well log is in compliance with the Montana well construction standards. This report is true to the best of my knowledge.

Name:
Company: LIBERTY DRILLING & PUMP CO
License No: MWC-22
Date Completed: 8/20/1991

There are no borehole dimensions assigned to this well.

Casing

From	To	Diameter	Wall Thickness	Pressure Rating	Joint	Type
0	30	4				PVC

Completion (Perf/Screen)

From	To	Diameter	# of Openings	Size of Openings	Description
15	29.1	4			FACTORY CUT SCR

Annular Space (Seal/Grout/Packer)

From	To	Description	Cont. Fed?
0	0	BENTONITE	

MONTANA WELL LOG REPORT**Other Options**

This well log reports the activities of a licensed Montana well driller, serves as the official record of work done within the borehole and casing, and describes the amount of water encountered. This report is compiled electronically from the contents of the Ground Water Information Center (GWIC) database for this site. Acquiring water rights is the well owner's responsibility and is NOT accomplished by the filing of this report.

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Site Name: NEILSON DENNIS
GWIC Id: 152162

Section 7: Well Test Data

Total Depth: 119
 Static Water Level: 16
 Water Temperature:

Section 1: Well Owner(s)

1) NEILSON, DENNIS (MAIL)
 FUTURA PARK #2
 MISSOULA MT 59802 [09/20/1995]

Air Test *

100 gpm with drill stem set at feet for 1 hours.
 Time of recovery hours.
 Recovery water level feet.
 Pumping water level 50 feet.

Section 2: Location

Township	Range	Section	Quarter Sections	Geocode
14N	21W	25	NW¼ SE¼	
County				

MISSOULA

Latitude	Longitude	Geomethod	Datum
46.94136	-114.195837	TRS-SEC	NAD83
Ground Surface Altitude	Ground Surface Method	Datum	Date

* During the well test the discharge rate shall be as uniform as possible. This rate may or may not be the sustainable yield of the well. Sustainable yield does not include the reservoir of the well casing.

Addition	Block	Lot
----------	-------	-----

Section 8: Remarks**Section 3: Proposed Use of Water**

DOMESTIC (1)

Section 4: Type of Work

Drilling Method: ROTARY
 Status: NEW WELL

Section 5: Well Completion Date

Date well completed: Wednesday, September 20, 1995

Section 6: Well Construction Details

There are no borehole dimensions assigned to this well.

Casing

From	To	Diameter	Wall Thickness	Pressure Rating	Joint	Type
-1.5	119	6				STEEL

Completion (Perf/Screen)

From	To	Diameter	# of Openings	Size of Openings	Description
119	119	6			OPEN BOTTOM *

Annular Space (Seal/Grout/Packer)

From	To	Description	Cont. Fed?
0	20	BENTONITE	

Section 9: Well Log**Geologic Source**

112ALVM - ALLUVIUM (PLEISTOCENE)

From	To	Description
0	1	CLAY & BLACK DIRT
1	2	CLAY
2	16	CLAY SAND & GRAVEL
16	21	SAND GRAVEL & WATER
21	74	SAND & WATER
74	78	CLAY
78	81	CLAY & GRAVEL
81	88	SAND & WATER
88	91	GRAY CLAY
91	93	CLAY & GRAVEL
93	95	SAND & WATER
95	98	SAND GRAVEL & WATER
98	114	SAND & WATER
114	119	SAND GRAVEL & WATER

Driller Certification

All work performed and reported in this well log is in compliance with the Montana well construction standards. This report is true to the best of my knowledge.

Name:
Company: CAMP WELL DRILLING
License No: WWC-7
Date Completed: 9/20/1995

Other Options

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Section 7: Well Test Data

Total Depth: 110
Static Water Level: 15
Water Temperature:

Air Test *

30 gpm with drill stem set at feet for 1 hours.
 Time of recovery hours.
 Recovery water level feet.
 Pumping water level feet.

** During the well test the discharge rate shall be as uniform as possible. This rate may or may not be the sustainable yield of the well. Sustainable yield does not include the reservoir of the well casing.*

Addition	Block	Lot
PLAT J		

Section 8: Remarks

JEROMES FILE NO: 6387

Section 9: Well Log

Geologic Source

112ALVM - ALLUVIUM (PLEISTOCENE)

[illegible]

Driller Certification

All work performed and reported in this well log is in compliance with the Montana well construction standards. This report is true to the best of my knowledge.

Name:
Company: JEROMES DRILLING CO
License No: WWC-249
Date Completed: 3/18/1996

From	To	Diameter	Wall Thickness	Pressure Rating	Joint	Type
-2	100	6				STEEL

There are no completion records assigned to this well.

Annular Space (Seal/Grout/Packer)

From	To	Description	Cont. Fed?
0	0	BENTONITE	

MONTANA WELL LOG REPORT**Other Options**

This well log reports the activities of a licensed Montana well driller, serves as the official record of work done within the borehole and casing, and describes the amount of water encountered. This report is compiled electronically from the contents of the Ground Water Information Center (GWIC) database for this site. Acquiring water rights is the well owner's responsibility and is NOT accomplished by the filing of this report.

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Site Name: MAGNOLIA ESTATES - WELL 2**GWIC Id: 167188****DNRC Water Right: C105173-00****Section 1: Well Owner(s)**

1) MAGNOLIA ESTATES (MAIL)
 2501 GARDENA DR
 MISSOULA MT 59802 [03/08/1998]

Section 2: Location

Township	Range	Section	Quarter Sections	Geocode
14N	21W	25	NE¼ NE¼ NW¼ SE¼	
County				
MISSOULA				
Latitude	Longitude	Geomethod	Datum	
46.94152	-114.1905	MAP	NAD83	
Ground Surface Altitude	Ground Surface Method	Datum	Date	
Addition	Block	Lot		

Section 3: Proposed Use of Water

PUBLIC WATER SUPPLY (1)

Section 4: Type of Work

Drilling Method: ROTARY
 Status: NEW WELL

Section 5: Well Completion Date

Date well completed: Sunday, March 8, 1998

Section 6: Well Construction Details**Borehole dimensions**

From	To	Diameter
0	159	8

Casing

From	To	Diameter	Wall Thickness	Pressure Rating	Joint	Type
-2	146	8				STEEL

Completion (Perf/Screen)

From	To	Diameter	# of Openings	Size of Openings	Description
146	159	0			OPEN HOLE

Annular Space (Seal/Grout/Packer)

From	To	Description	Cont. Fed?
0	74	BENTONITE	

Section 7: Well Test Data

Total Depth: 159
 Static Water Level: 21
 Water Temperature:

Pump Test *

Depth pump set for test _ feet.
 290 gpm pump rate with _ feet of drawdown after _ hours of pumping.
 Time of recovery _ hours.
 Recovery water level _ feet.
 Pumping water level 24.3 feet.

* During the well test the discharge rate shall be as uniform as possible. This rate may or may not be the sustainable yield of the well. Sustainable yield does not include the reservoir of the well casing.

Section 8: Remarks**Section 9: Well Log****Geologic Source**

112ALVM - ALLUVIUM (PLEISTOCENE)

From	To	Description
0	2	TOPSOIL
2	5	SAND AND FEW SMALL GRAVELS
5	7	SAND AND GRAVEL MIX
7	11	GRAVEL WITH FINE BRN SAND
11	14	COBBLES WITH SILT AND SAND
14	18	PEA GRAVEL
18	22	PEA GRAVEL WET
22	74	SAND FINE BROWN HEAVING W/WATER
74	78	SAND BROWN WITH CLAY STINGERS
78	99	SAND FINE GRAY HEAVING WITH WATER
99	107	SAND COARSE GRAY HEAVING WITH WATER
107	137	COARSE SANDS AND GRAVEL WITH SILT AND WATER
137	139	COARSE SANDS AND GRAVELS
139	147	GRAVEL 2 INCH AND SMALLER WITH WATER
147	159	ARGILLITE GRAY IMPERVIOUS VERY FINE GRAINED

Driller Certification

All work performed and reported in this well log is in compliance with the Montana well construction standards. This report is true to the best of my knowledge.

Name:**Company:** BLACKFOOT WELL DRILLING & PUMP SERVICE INC**License No:** WWC-578**Date Completed:** 3/8/1998

MONTANA WELL LOG REPORT**Other Options**

This well log reports the activities of a licensed Montana well driller, serves as the official record of work done within the borehole and casing, and describes the amount of water encountered. This report is compiled electronically from the contents of the Ground Water Information Center (GWIC) database for this site. Acquiring water rights is the well owner's responsibility and is NOT accomplished by the filing of this report.

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Site Name: MAGNOLIA ESTATES - WELL 1**GWIC Id: 167189****DNRC Water Right: C105173-00****Section 1: Well Owner(s)**

1) MAGNOLIA ESTATES (MAIL)
 7501 GARDENA DR
 MISSOULA MT 59802 [03/06/1998]

Section 2: Location

Township	Range	Section	Quarter Sections	Geocode
14N	21W	25	NE¼ NE¼ NW¼ SE¼	
County				
MISSOULA				
Latitude	Longitude	Geomethod	Datum	
46.94149	-114.19087	MAP	NAD83	
Ground Surface Altitude	Ground Surface Method	Datum	Date	
Addition	Block	Lot		

Section 3: Proposed Use of Water

PUBLIC WATER SUPPLY (1)

Section 4: Type of Work

Drilling Method: ROTARY

Status: NEW WELL

Section 5: Well Completion Date

Date well completed: Friday, March 6, 1998

Section 6: Well Construction Details**Borehole dimensions**

From	To	Diameter
0	148	8

Casing

From	To	Diameter	Wall Thickness	Pressure Rating	Joint	Type
-2	148	8				STEEL

Completion (Perf/Screen)

From	To	Diameter	# of Openings	Size of Openings	Description
148	148	8			OPEN BOTTOM *

Annular Space (Seal/Grout/Packer)

From	To	Description	Cont. Fed?
0	66	BENTONITE	

Section 7: Well Test Data

Total Depth: 148

Static Water Level: 21

Water Temperature:

Pump Test *

Depth pump set for test _ feet.

290 gpm pump rate with _ feet of drawdown after 10.75 hours of pumping.

Time of recovery _ hours.

Recovery water level _ feet.

Pumping water level 28 feet.

* During the well test the discharge rate shall be as uniform as possible. This rate may or may not be the sustainable yield of the well. Sustainable yield does not include the reservoir of the well casing.

Section 8: Remarks**Section 9: Well Log****Geologic Source**

112ALVM - ALLUVIUM (PLEISTOCENE)

From	To	Description
0	3	TOPSOIL
3	7	SAND AND SMALL GRAVELS
7	31	GRAVELS AND COBBLES
31	56	SAND FINE BROWN WATER SATURATED HEAVING
56	57	CLAY SILTY SANDY BROWN
57	87	SAND GRAY HEAVING WITH WATER
87	98	GRAVEL SAND SILTY WITH CLAY STRINGERS
98	110	GRAVEL ANGULAR SILTY WITH CLAY STRINGER
110	135	GRAVEL AND COARSE SAND
135	138	FINE SAND
138	150	GRAVEL AND COARSE SAND WITH WATER AIR LIFT 350 GPM

Driller Certification

All work performed and reported in this well log is in compliance with the Montana well construction standards. This report is true to the best of my knowledge.

Name:**Company:** BLACKFOOT WELL DRILLING & PUMP SERVICE INC**License No:** WWC-578**Date Completed:** 3/6/1998

Other Options

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Section 7: Well Test Data

Total Depth: 113
Static Water Level: 9
Water Temperature:

Air Test *

75 gpm with drill stem set at 40 feet for 2 hours.
Time of recovery 0.1 hours.
Recovery water level 9 feet.
Pumping water level feet.

** During the well test the discharge rate shall be as uniform as possible. This rate may or may not be the sustainable yield of the well. Sustainable yield does not include the reservoir of the well casing.*

Section 8: Remarks

THIS IS A COPY OF ORIGINAL WELL LOG WHICH WAS RUINED BY WATER. THIS COPY IS DATED 2/24/2014.

Section 9: Well Log

Geologic Source

Unassigned

[illegible]

Driller Certification

All work performed and reported in this well log is in compliance with the Montana well construction standards. This report is true to the best of my knowledge.

Name: MARK MILLER
Company: A-10 DRILLING
License No: WWC-611
Date Completed: 4/4/1986

Date Completed: 4/4/1986

From	To	Diameter
0	113	6

Casing

From	To	Diameter	Wall Thickness	Pressure Rating	Joint	Type
-1	113	6	0.25		WELDED	STEEL

There are no completion records assigned to this well.

Annular Space (Seal/Grout/Packer)

From	To	Description	Cont. Fed?
0	0	BENTONITE	Y

Other Options

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Section 7: Well Test Data

Total Depth: 108
Static Water Level: 20
Water Temperature:

Unknown Test Method *

Yield 25 gpm.
Pumping water level 33 feet.
Time of recovery hours.
Recovery water level feet.

** During the well test the discharge rate shall be as uniform as possible. This rate may or may not be the sustainable yield of the well. Sustainable yield does not include the reservoir of the well casing.*

Section 8: Remarks
JEROMES FILE NO: 1186

Section 9: Well Log

Geologic Source
112ALVM - ALLUVIUM (PLEISTOCENE)

[illegible]

Driller Certification

All work performed and reported in this well log is in compliance with the Montana well construction standards. This report is true to the best of my knowledge.

Name:
Company: JEROMES DRILLING CO
License No: WWC-249
Date Completed: 6/5/1981

Date Completed: 6/5/1981

[illegible]

Received by OpenCut FTS 06/31/2021

1260&agency=mbmg&session=1025616&

There are no annular space records assigned to this well.

Other Options

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Section 7: Well Test Data

Total Depth: 28

Static Water Level: 17.11
Water Temperature:

Unknown Test Method *

Yield _ gpm.
Pumping water level _ feet.
Time of recovery _ hours.
Recovery water level _ feet.

** During the well test the discharge rate shall be as uniform as possible. This rate may or may not be the sustainable yield of the well. Sustainable yield does not include the reservoir of the well casing.*

Section 8: Remarks

Section 9: Well Log

Geologic Source

Unassigned

[illegible]

Driller Certification

All work performed and reported in this well log is in compliance with the Montana well construction standards. This report is true to the best of my knowledge.

Name:
Company: LIBERTY DRILLING & PUMP CO
License No: MWC-22
Date Completed: 8/21/1991

Recieved by Opencut FTS 06/01/2021
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8 APPENDIX B – WATER QUALITY REPORTS



LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Environmental Consulting Services, LLC
Project: SMURFIT-EI
Lab ID: B19082921-007
Client Sample ID: SMW-1

Report Date: 09/30/19
Collection Date: 08/29/19 10:55
Date Received: 08/30/19
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
INORGANICS							
Alkalinity, Total as CaCO ₃	126	mg/L		4		A2320 B	09/03/19 11:34 / zas
Bicarbonate as HCO ₃	154	mg/L		4		A2320 B	09/03/19 11:34 / zas
Carbonate as CO ₃	ND	mg/L		4		A2320 B	09/03/19 11:34 / zas
Chloride	6	mg/L		1		E300.0	08/31/19 00:42 / mrc
Sulfate	20	mg/L		1		E300.0	08/31/19 00:42 / mrc
NUTRIENTS							
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	08/30/19 15:08 / srh
Nitrogen, Nitrate+Nitrite as N	0.69	mg/L		0.01		E353.2	09/03/19 10:34 / srh
Nitrogen, Kjeldahl, Total as N	ND	mg/L		0.5		E351.2	09/03/19 14:43 / klw
Nitrogen, Total	0.7	mg/L		0.5		Calculation	09/04/19 13:43 / bas
Phosphorus, Total as P	0.074	mg/L		0.005		E365.1	09/03/19 14:09 / klw
METALS, DISSOLVED							
Mercury	ND	mg/L	D	0.0002		SW7470A	09/08/19 17:35 / jag
METALS, DISSOLVED							
Arsenic	0.001	mg/L		0.001		SW6020	09/05/19 23:32 / car
Barium	0.16	mg/L		0.05		SW6020	09/05/19 23:32 / car
Cadmium	ND	mg/L		0.001		SW6020	09/05/19 23:32 / car
Calcium	34	mg/L		1		SW6010B	09/03/19 18:32 / rlh
Chromium	ND	mg/L		0.005		SW6020	09/05/19 23:32 / car
Lead	ND	mg/L		0.001		SW6020	09/05/19 23:32 / car
Magnesium	12	mg/L		1		SW6010B	09/03/19 18:32 / rlh
Potassium	3	mg/L		1		SW6010B	09/03/19 18:32 / rlh
Selenium	ND	mg/L		0.001		SW6020	09/05/19 23:32 / car
Silver	ND	mg/L		0.001		SW6020	09/05/19 23:32 / car
Sodium	8	mg/L		1		SW6010B	09/03/19 18:32 / rlh
METALS, TOTAL							
Arsenic	0.001	mg/L		0.001		SW6020	09/05/19 23:55 / car
Barium	0.16	mg/L		0.05		SW6020	09/05/19 23:55 / car
Cadmium	ND	mg/L		0.001		SW6020	09/05/19 23:55 / car
Chromium	ND	mg/L		0.005		SW6020	09/05/19 23:55 / car
Lead	ND	mg/L		0.001		SW6020	09/05/19 23:55 / car
Mercury	ND	mg/L		0.0001		SW7470A	09/05/19 16:47 / jag
Selenium	ND	mg/L		0.001		SW6020	09/05/19 23:55 / car
Silver	ND	mg/L		0.001		SW6020	09/05/19 23:55 / car
VOLATILE ORGANIC COMPOUNDS							
Benzene	ND	ug/L		1.0		SW8260B	09/04/19 14:29 / msc
Bromobenzene	ND	ug/L		1.0		SW8260B	09/04/19 14:29 / msc
Bromochloromethane	ND	ug/L		1.0		SW8260B	09/04/19 14:29 / msc
Bromodichloromethane	ND	ug/L		1.0		SW8260B	09/04/19 14:29 / msc

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Environmental Consulting Services, LLC
Project: SMURFIT-EI
Lab ID: B19082921-007
Client Sample ID: SMW-1

Report Date: 09/30/19
Collection Date: 08/29/19 10:55
DateReceived: 08/30/19
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Bromoform	ND	ug/L		1.0		SW8260B	09/04/19 14:29 / msc
Bromomethane	ND	ug/L		1.0		SW8260B	09/04/19 14:29 / msc
Carbon tetrachloride	ND	ug/L		1.0		SW8260B	09/04/19 14:29 / msc
Chlorobenzene	ND	ug/L		1.0		SW8260B	09/04/19 14:29 / msc
Chlorodibromomethane	ND	ug/L		1.0		SW8260B	09/04/19 14:29 / msc
Chloroethane	ND	ug/L		1.0		SW8260B	09/04/19 14:29 / msc
Chloroform	ND	ug/L		1.0		SW8260B	09/04/19 14:29 / msc
Chloromethane	ND	ug/L		1.0		SW8260B	09/04/19 14:29 / msc
1,2-Dibromoethane	ND	ug/L		1.0		SW8260B	09/04/19 14:29 / msc
2-Chlorotoluene	ND	ug/L		1.0		SW8260B	09/04/19 14:29 / msc
4-Chlorotoluene	ND	ug/L		1.0		SW8260B	09/04/19 14:29 / msc
Dibromomethane	ND	ug/L		1.0		SW8260B	09/04/19 14:29 / msc
1,2-Dichlorobenzene	ND	ug/L		1.0		SW8260B	09/04/19 14:29 / msc
1,3-Dichlorobenzene	ND	ug/L		1.0		SW8260B	09/04/19 14:29 / msc
1,4-Dichlorobenzene	ND	ug/L		1.0		SW8260B	09/04/19 14:29 / msc
Dichlorodifluoromethane	ND	ug/L		1.0		SW8260B	09/04/19 14:29 / msc
1,1-Dichloroethane	ND	ug/L		1.0		SW8260B	09/04/19 14:29 / msc
1,2-Dichloroethane	ND	ug/L		1.0		SW8260B	09/04/19 14:29 / msc
1,1-Dichloroethene	ND	ug/L		1.0		SW8260B	09/04/19 14:29 / msc
cis-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	09/04/19 14:29 / msc
trans-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	09/04/19 14:29 / msc
1,2-Dichloropropane	ND	ug/L		1.0		SW8260B	09/04/19 14:29 / msc
1,3-Dichloropropane	ND	ug/L		1.0		SW8260B	09/04/19 14:29 / msc
2,2-Dichloropropane	ND	ug/L		1.0		SW8260B	09/04/19 14:29 / msc
1,1-Dichloropropene	ND	ug/L		1.0		SW8260B	09/04/19 14:29 / msc
cis-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	09/04/19 14:29 / msc
trans-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	09/04/19 14:29 / msc
Ethylbenzene	ND	ug/L		1.0		SW8260B	09/04/19 14:29 / msc
Methyl ethyl ketone	ND	ug/L		20		SW8260B	09/04/19 14:29 / msc
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8260B	09/04/19 14:29 / msc
Methylene chloride	ND	ug/L		1.0		SW8260B	09/04/19 14:29 / msc
Styrene	ND	ug/L		1.0		SW8260B	09/04/19 14:29 / msc
1,1,1,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	09/04/19 14:29 / msc
1,1,2,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	09/04/19 14:29 / msc
Tetrachloroethene	ND	ug/L		1.0		SW8260B	09/04/19 14:29 / msc
Toluene	ND	ug/L		1.0		SW8260B	09/04/19 14:29 / msc
1,1,1-Trichloroethane	ND	ug/L		1.0		SW8260B	09/04/19 14:29 / msc
1,1,2-Trichloroethane	ND	ug/L		1.0		SW8260B	09/04/19 14:29 / msc
Trichloroethene	ND	ug/L		1.0		SW8260B	09/04/19 14:29 / msc
Trichlorofluoromethane	ND	ug/L		1.0		SW8260B	09/04/19 14:29 / msc
1,2,3-Trichloropropane	ND	ug/L		1.0		SW8260B	09/04/19 14:29 / msc
Vinyl chloride	ND	ug/L		1.0		SW8260B	09/04/19 14:29 / msc
m+p-Xylenes	ND	ug/L		1.0		SW8260B	09/04/19 14:29 / msc

Report RL - Analyte reporting limit.
Definitions: QCL - Quality control limit.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Environmental Consulting Services, LLC
Project: SMURFIT-EI
Lab ID: B19082921-007
Client Sample ID: SMW-1

Report Date: 09/30/19
Collection Date: 08/29/19 10:55
Date Received: 08/30/19
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
o-Xylene	ND	ug/L		1.0		SW8260B	09/04/19 14:29 / msc
Xylenes, Total	ND	ug/L		1.0		SW8260B	09/04/19 14:29 / msc
Surr: Dibromofluoromethane	98.0	%REC		77-126		SW8260B	09/04/19 14:29 / msc
Surr: 1,2-Dichloroethane-d4	102	%REC		70-130		SW8260B	09/04/19 14:29 / msc
Surr: Toluene-d8	102	%REC		79-122		SW8260B	09/04/19 14:29 / msc
Surr: p-Bromofluorobenzene	111	%REC		76-127		SW8260B	09/04/19 14:29 / msc
SEMI-VOLATILE ORGANIC COMPOUNDS							
1,2,4-Trichlorobenzene	ND	ug/L		10		SW8270C	09/05/19 18:54 / dsm
1,2-Dichlorobenzene	ND	ug/L		10		SW8270C	09/05/19 18:54 / dsm
1,3-Dichlorobenzene	ND	ug/L		10		SW8270C	09/05/19 18:54 / dsm
1,4-Dichlorobenzene	ND	ug/L		10		SW8270C	09/05/19 18:54 / dsm
1-Methylnaphthalene	ND	ug/L		10		SW8270C	09/05/19 18:54 / dsm
2,4,5-Trichlorophenol	ND	ug/L		10		SW8270C	09/05/19 18:54 / dsm
2,4,6-Trichlorophenol	ND	ug/L		10		SW8270C	09/05/19 18:54 / dsm
2,4-Dichlorophenol	ND	ug/L		10		SW8270C	09/05/19 18:54 / dsm
2,4-Dimethylphenol	ND	ug/L		10		SW8270C	09/05/19 18:54 / dsm
2,4-Dinitrophenol	ND	ug/L		50		SW8270C	09/05/19 18:54 / dsm
2,4-Dinitrotoluene	ND	ug/L		10		SW8270C	09/05/19 18:54 / dsm
2,6-Dinitrotoluene	ND	ug/L		10		SW8270C	09/05/19 18:54 / dsm
2-Chloronaphthalene	ND	ug/L		10		SW8270C	09/05/19 18:54 / dsm
2-Chlorophenol	ND	ug/L		10		SW8270C	09/05/19 18:54 / dsm
2-Methylnaphthalene	ND	ug/L		10		SW8270C	09/05/19 18:54 / dsm
2-Nitrophenol	ND	ug/L		10		SW8270C	09/05/19 18:54 / dsm
3,3'-Dichlorobenzidine	ND	ug/L		10		SW8270C	09/05/19 18:54 / dsm
4,6-Dinitro-2-methylphenol	ND	ug/L		50		SW8270C	09/05/19 18:54 / dsm
4-Bromophenyl phenyl ether	ND	ug/L		10		SW8270C	09/05/19 18:54 / dsm
4-Chloro-3-methylphenol	ND	ug/L		10		SW8270C	09/05/19 18:54 / dsm
4-Chlorophenol	ND	ug/L		10		SW8270C	09/05/19 18:54 / dsm
4-Chlorophenyl phenyl ether	ND	ug/L		10		SW8270C	09/05/19 18:54 / dsm
4-Nitrophenol	ND	ug/L		50		SW8270C	09/05/19 18:54 / dsm
Acenaphthene	ND	ug/L		10		SW8270C	09/05/19 18:54 / dsm
Acenaphthylene	ND	ug/L		10		SW8270C	09/05/19 18:54 / dsm
Anthracene	ND	ug/L		10		SW8270C	09/05/19 18:54 / dsm
Azobenzene	ND	ug/L		10		SW8270C	09/05/19 18:54 / dsm
Benzidine	ND	ug/L		10		SW8270C	09/05/19 18:54 / dsm
Benzo(a)anthracene	ND	ug/L		10		SW8270C	09/05/19 18:54 / dsm
Benzo(a)pyrene	ND	ug/L		10		SW8270C	09/05/19 18:54 / dsm
Benzo(b)fluoranthene	ND	ug/L		10		SW8270C	09/05/19 18:54 / dsm
Benzo(g,h,i)perylene	ND	ug/L		10		SW8270C	09/05/19 18:54 / dsm
Benzo(k)fluoranthene	ND	ug/L		10		SW8270C	09/05/19 18:54 / dsm
bis(-2-chloroethoxy)Methane	ND	ug/L		10		SW8270C	09/05/19 18:54 / dsm
bis(-2-chloroethyl)Ether	ND	ug/L		10		SW8270C	09/05/19 18:54 / dsm

Report RL - Analyte reporting limit.
Definitions: QCL - Quality control limit.

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LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Environmental Consulting Services, LLC
Project: SMURFIT-EI
Lab ID: B19082921-007
Client Sample ID: SMW-1

Report Date: 09/30/19
Collection Date: 08/29/19 10:55
Date Received: 08/30/19
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
SEMI-VOLATILE ORGANIC COMPOUNDS							
bis(2-chloroisopropyl)Ether	ND	ug/L		10		SW8270C	09/05/19 18:54 / dsm
bis(2-ethylhexyl)Phthalate	ND	ug/L		10		SW8270C	09/05/19 18:54 / dsm
Butylbenzylphthalate	ND	ug/L		10		SW8270C	09/05/19 18:54 / dsm
Chrysene	ND	ug/L		10		SW8270C	09/05/19 18:54 / dsm
Di-n-butyl phthalate	ND	ug/L		10		SW8270C	09/05/19 18:54 / dsm
Di-n-octyl phthalate	ND	ug/L		10		SW8270C	09/05/19 18:54 / dsm
Dibenzo(a,h)anthracene	ND	ug/L		10		SW8270C	09/05/19 18:54 / dsm
Diethyl phthalate	ND	ug/L		10		SW8270C	09/05/19 18:54 / dsm
Dimethyl phthalate	ND	ug/L		10		SW8270C	09/05/19 18:54 / dsm
Fluoranthene	ND	ug/L		10		SW8270C	09/05/19 18:54 / dsm
Fluorene	ND	ug/L		10		SW8270C	09/05/19 18:54 / dsm
Hexachlorobenzene	ND	ug/L		10		SW8270C	09/05/19 18:54 / dsm
Hexachlorobutadiene	ND	ug/L		10		SW8270C	09/05/19 18:54 / dsm
Hexachlorocyclopentadiene	ND	ug/L		10		SW8270C	09/05/19 18:54 / dsm
Hexachloroethane	ND	ug/L		10		SW8270C	09/05/19 18:54 / dsm
Indeno(1,2,3-cd)pyrene	ND	ug/L		10		SW8270C	09/05/19 18:54 / dsm
Isophorone	ND	ug/L		10		SW8270C	09/05/19 18:54 / dsm
m+p-Cresols	ND	ug/L		10		SW8270C	09/05/19 18:54 / dsm
n-Nitroso-di-n-propylamine	ND	ug/L		10		SW8270C	09/05/19 18:54 / dsm
n-Nitrosodimethylamine	ND	ug/L		10		SW8270C	09/05/19 18:54 / dsm
n-Nitrosodiphenylamine	ND	ug/L		10		SW8270C	09/05/19 18:54 / dsm
Naphthalene	ND	ug/L		10		SW8270C	09/05/19 18:54 / dsm
Nitrobenzene	ND	ug/L		10		SW8270C	09/05/19 18:54 / dsm
o-Cresol	ND	ug/L		10		SW8270C	09/05/19 18:54 / dsm
Pentachlorophenol	ND	ug/L		50		SW8270C	09/05/19 18:54 / dsm
Phenanthrene	ND	ug/L		10		SW8270C	09/05/19 18:54 / dsm
Phenol	ND	ug/L		10		SW8270C	09/05/19 18:54 / dsm
Pyrene	ND	ug/L		10		SW8270C	09/05/19 18:54 / dsm
Pyridine	ND	ug/L		10		SW8270C	09/05/19 18:54 / dsm
Surr: 2,4,6-Tribromophenol	89.0	%REC		21-130		SW8270C	09/05/19 18:54 / dsm
Surr: 2-Fluorobiphenyl	68.0	%REC		28-107		SW8270C	09/05/19 18:54 / dsm
Surr: 2-Fluorophenol	49.0	%REC		20-56		SW8270C	09/05/19 18:54 / dsm
Surr: Nitrobenzene-d5	66.0	%REC		32-94		SW8270C	09/05/19 18:54 / dsm
Surr: Phenol-d5	37.0	%REC		19-45		SW8270C	09/05/19 18:54 / dsm
Surr: Terphenyl-d14	98.0	%REC		32-122		SW8270C	09/05/19 18:54 / dsm
POLYCHLORINATED BIPHENYLS (PCBS)							
Aroclor 1016	ND	ug/L		0.20		SW8082A	09/04/19 14:48 / jem
Aroclor 1221	ND	ug/L		0.20		SW8082A	09/04/19 14:48 / jem
Aroclor 1232	ND	ug/L		0.20		SW8082A	09/04/19 14:48 / jem
Aroclor 1242	ND	ug/L		0.20		SW8082A	09/04/19 14:48 / jem
Aroclor 1248	ND	ug/L		0.20		SW8082A	09/04/19 14:48 / jem
Aroclor 1254	ND	ug/L		0.20		SW8082A	09/04/19 14:48 / jem

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LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Environmental Consulting Services, LLC
Project: SMURFIT-EI
Lab ID: B19082921-007
Client Sample ID: SMW-1

Report Date: 09/30/19
Collection Date: 08/29/19 10:55
Date Received: 08/30/19
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
POLYCHLORINATED BIPHENYLS (PCBS)							
Aroclor 1260	ND	ug/L		0.20		SW8082A	09/04/19 14:48 / jem
Aroclor 1262	ND	ug/L		0.20		SW8082A	09/04/19 14:48 / jem
Aroclor 1268	ND	ug/L		0.20		SW8082A	09/04/19 14:48 / jem
Surr: Decachlorobiphenyl	94.0	%REC		44-130		SW8082A	09/04/19 14:48 / jem
Surr: Tetrachloro-m-xylene	79.0	%REC		40-110		SW8082A	09/04/19 14:48 / jem
- The sample extract received a Sulfuric Acid Clean-up (EPA Method 3665) and a Sulfur Clean-up (EPA Method 3660-copper) prior to analysis.							

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QCL - Quality control limit.

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LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Environmental Consulting Services, LLC
Project: SMURFIT-EI
Lab ID: B19082921-008
Client Sample ID: SMW-20

Report Date: 09/30/19
Collection Date: 08/29/19 12:35
Date Received: 08/30/19
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
INORGANICS							
Alkalinity, Total as CaCO ₃	185	mg/L		4		A2320 B	09/03/19 11:49 / zas
Bicarbonate as HCO ₃	225	mg/L		4		A2320 B	09/03/19 11:49 / zas
Carbonate as CO ₃	ND	mg/L		4		A2320 B	09/03/19 11:49 / zas
Chloride	13	mg/L		1		E300.0	08/31/19 00:58 / mrc
Sulfate	23	mg/L		1		E300.0	08/31/19 00:58 / mrc
NUTRIENTS							
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	08/30/19 15:11 / srh
Nitrogen, Nitrate+Nitrite as N	0.47	mg/L		0.01		E353.2	09/03/19 10:39 / srh
Nitrogen, Kjeldahl, Total as N	ND	mg/L		0.5		E351.2	09/03/19 14:47 / klw
Nitrogen, Total	ND	mg/L		0.5		Calculation	09/04/19 13:43 / bas
Phosphorus, Total as P	0.083	mg/L		0.005		E365.1	09/03/19 14:12 / klw
METALS, DISSOLVED							
Mercury	ND	mg/L		0.0001		SW7470A	09/08/19 17:37 / jag
METALS, DISSOLVED							
Arsenic	0.001	mg/L		0.001		SW6020	09/05/19 23:40 / car
Barium	0.29	mg/L		0.05		SW6010B	09/03/19 18:37 / rlh
Cadmium	ND	mg/L		0.001		SW6020	09/05/19 23:40 / car
Calcium	52	mg/L		1		SW6010B	09/03/19 18:37 / rlh
Chromium	ND	mg/L		0.005		SW6020	09/05/19 23:40 / car
Lead	ND	mg/L		0.001		SW6020	09/05/19 23:40 / car
Magnesium	18	mg/L		1		SW6010B	09/03/19 18:37 / rlh
Potassium	4	mg/L		1		SW6010B	09/03/19 18:37 / rlh
Selenium	ND	mg/L		0.001		SW6020	09/05/19 23:40 / car
Silver	ND	mg/L		0.001		SW6020	09/05/19 23:40 / car
Sodium	11	mg/L		1		SW6010B	09/03/19 18:37 / rlh
METALS, TOTAL							
Arsenic	0.002	mg/L		0.001		SW6020	09/05/19 23:58 / car
Barium	0.27	mg/L		0.05		SW6020	09/05/19 23:58 / car
Cadmium	ND	mg/L		0.001		SW6020	09/05/19 23:58 / car
Chromium	ND	mg/L		0.005		SW6020	09/05/19 23:58 / car
Lead	ND	mg/L		0.001		SW6020	09/05/19 23:58 / car
Mercury	ND	mg/L		0.0001		SW7470A	09/05/19 16:49 / jag
Selenium	ND	mg/L		0.001		SW6020	09/05/19 23:58 / car
Silver	ND	mg/L		0.001		SW6020	09/05/19 23:58 / car
VOLATILE ORGANIC COMPOUNDS							
Benzene	ND	ug/L		1.0		SW8260B	09/04/19 14:57 / msc
Bromobenzene	ND	ug/L		1.0		SW8260B	09/04/19 14:57 / msc
Bromochloromethane	ND	ug/L		1.0		SW8260B	09/04/19 14:57 / msc
Bromodichloromethane	ND	ug/L		1.0		SW8260B	09/04/19 14:57 / msc

Report RL - Analyte reporting limit.
Definitions: QCL - Quality control limit.

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ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Environmental Consulting Services, LLC
Project: SMURFIT-EI
Lab ID: B19082921-008
Client Sample ID: SMW-20

Report Date: 09/30/19
Collection Date: 08/29/19 12:35
Date Received: 08/30/19
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Bromoform	ND	ug/L		1.0		SW8260B	09/04/19 14:57 / msc
Bromomethane	ND	ug/L		1.0		SW8260B	09/04/19 14:57 / msc
Carbon tetrachloride	ND	ug/L		1.0		SW8260B	09/04/19 14:57 / msc
Chlorobenzene	ND	ug/L		1.0		SW8260B	09/04/19 14:57 / msc
Chlorodibromomethane	ND	ug/L		1.0		SW8260B	09/04/19 14:57 / msc
Chloroethane	ND	ug/L		1.0		SW8260B	09/04/19 14:57 / msc
Chloroform	ND	ug/L		1.0		SW8260B	09/04/19 14:57 / msc
Chloromethane	ND	ug/L		1.0		SW8260B	09/04/19 14:57 / msc
1,2-Dibromoethane	ND	ug/L		1.0		SW8260B	09/04/19 14:57 / msc
2-Chlorotoluene	ND	ug/L		1.0		SW8260B	09/04/19 14:57 / msc
4-Chlorotoluene	ND	ug/L		1.0		SW8260B	09/04/19 14:57 / msc
Dibromomethane	ND	ug/L		1.0		SW8260B	09/04/19 14:57 / msc
1,2-Dichlorobenzene	ND	ug/L		1.0		SW8260B	09/04/19 14:57 / msc
1,3-Dichlorobenzene	ND	ug/L		1.0		SW8260B	09/04/19 14:57 / msc
1,4-Dichlorobenzene	ND	ug/L		1.0		SW8260B	09/04/19 14:57 / msc
Dichlorodifluoromethane	ND	ug/L		1.0		SW8260B	09/04/19 14:57 / msc
1,1-Dichloroethane	ND	ug/L		1.0		SW8260B	09/04/19 14:57 / msc
1,2-Dichloroethane	ND	ug/L		1.0		SW8260B	09/04/19 14:57 / msc
1,1-Dichloroethene	ND	ug/L		1.0		SW8260B	09/04/19 14:57 / msc
cis-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	09/04/19 14:57 / msc
trans-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	09/04/19 14:57 / msc
1,2-Dichloropropane	ND	ug/L		1.0		SW8260B	09/04/19 14:57 / msc
1,3-Dichloropropane	ND	ug/L		1.0		SW8260B	09/04/19 14:57 / msc
2,2-Dichloropropane	ND	ug/L		1.0		SW8260B	09/04/19 14:57 / msc
1,1-Dichloropropene	ND	ug/L		1.0		SW8260B	09/04/19 14:57 / msc
cis-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	09/04/19 14:57 / msc
trans-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	09/04/19 14:57 / msc
Ethylbenzene	ND	ug/L		1.0		SW8260B	09/04/19 14:57 / msc
Methyl ethyl ketone	ND	ug/L		20		SW8260B	09/04/19 14:57 / msc
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8260B	09/04/19 14:57 / msc
Methylene chloride	ND	ug/L		1.0		SW8260B	09/04/19 14:57 / msc
Styrene	ND	ug/L		1.0		SW8260B	09/04/19 14:57 / msc
1,1,1,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	09/04/19 14:57 / msc
1,1,2,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	09/04/19 14:57 / msc
Tetrachloroethene	ND	ug/L		1.0		SW8260B	09/04/19 14:57 / msc
Toluene	ND	ug/L		1.0		SW8260B	09/04/19 14:57 / msc
1,1,1-Trichloroethane	ND	ug/L		1.0		SW8260B	09/04/19 14:57 / msc
1,1,2-Trichloroethane	ND	ug/L		1.0		SW8260B	09/04/19 14:57 / msc
Trichloroethene	ND	ug/L		1.0		SW8260B	09/04/19 14:57 / msc
Trichlorofluoromethane	ND	ug/L		1.0		SW8260B	09/04/19 14:57 / msc
1,2,3-Trichloropropane	ND	ug/L		1.0		SW8260B	09/04/19 14:57 / msc
Vinyl chloride	ND	ug/L		1.0		SW8260B	09/04/19 14:57 / msc
m+p-Xylenes	ND	ug/L		1.0		SW8260B	09/04/19 14:57 / msc

Report RL - Analyte reporting limit.
Definitions: QCL - Quality control limit.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Environmental Consulting Services, LLC
Project: SMURFIT-EI
Lab ID: B19082921-008
Client Sample ID: SMW-20

Report Date: 09/30/19
Collection Date: 08/29/19 12:35
Date Received: 08/30/19
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
o-Xylene	ND	ug/L		1.0		SW8260B	09/04/19 14:57 / msc
Xylenes, Total	ND	ug/L		1.0		SW8260B	09/04/19 14:57 / msc
Surr: Dibromofluoromethane	102	%REC		77-126		SW8260B	09/04/19 14:57 / msc
Surr: 1,2-Dichloroethane-d4	103	%REC		70-130		SW8260B	09/04/19 14:57 / msc
Surr: Toluene-d8	103	%REC		79-122		SW8260B	09/04/19 14:57 / msc
Surr: p-Bromofluorobenzene	113	%REC		76-127		SW8260B	09/04/19 14:57 / msc
SEMI-VOLATILE ORGANIC COMPOUNDS							
1,2,4-Trichlorobenzene	ND	ug/L		10		SW8270C	09/05/19 20:00 / dsm
1,2-Dichlorobenzene	ND	ug/L		10		SW8270C	09/05/19 20:00 / dsm
1,3-Dichlorobenzene	ND	ug/L		10		SW8270C	09/05/19 20:00 / dsm
1,4-Dichlorobenzene	ND	ug/L		10		SW8270C	09/05/19 20:00 / dsm
1-Methylnaphthalene	ND	ug/L		10		SW8270C	09/05/19 20:00 / dsm
2,4,5-Trichlorophenol	ND	ug/L		10		SW8270C	09/05/19 20:00 / dsm
2,4,6-Trichlorophenol	ND	ug/L		10		SW8270C	09/05/19 20:00 / dsm
2,4-Dichlorophenol	ND	ug/L		10		SW8270C	09/05/19 20:00 / dsm
2,4-Dimethylphenol	ND	ug/L		10		SW8270C	09/05/19 20:00 / dsm
2,4-Dinitrophenol	ND	ug/L		50		SW8270C	09/05/19 20:00 / dsm
2,4-Dinitrotoluene	ND	ug/L		10		SW8270C	09/05/19 20:00 / dsm
2,6-Dinitrotoluene	ND	ug/L		10		SW8270C	09/05/19 20:00 / dsm
2-Chloronaphthalene	ND	ug/L		10		SW8270C	09/05/19 20:00 / dsm
2-Chlorophenol	ND	ug/L		10		SW8270C	09/05/19 20:00 / dsm
2-Methylnaphthalene	ND	ug/L		10		SW8270C	09/05/19 20:00 / dsm
2-Nitrophenol	ND	ug/L		10		SW8270C	09/05/19 20:00 / dsm
3,3'-Dichlorobenzidine	ND	ug/L		10		SW8270C	09/05/19 20:00 / dsm
4,6-Dinitro-2-methylphenol	ND	ug/L		50		SW8270C	09/05/19 20:00 / dsm
4-Bromophenyl phenyl ether	ND	ug/L		10		SW8270C	09/05/19 20:00 / dsm
4-Chloro-3-methylphenol	ND	ug/L		10		SW8270C	09/05/19 20:00 / dsm
4-Chlorophenol	ND	ug/L		10		SW8270C	09/05/19 20:00 / dsm
4-Chlorophenyl phenyl ether	ND	ug/L		10		SW8270C	09/05/19 20:00 / dsm
4-Nitrophenol	ND	ug/L		50		SW8270C	09/05/19 20:00 / dsm
Acenaphthene	ND	ug/L		10		SW8270C	09/05/19 20:00 / dsm
Acenaphthylene	ND	ug/L		10		SW8270C	09/05/19 20:00 / dsm
Anthracene	ND	ug/L		10		SW8270C	09/05/19 20:00 / dsm
Azobenzene	ND	ug/L		10		SW8270C	09/05/19 20:00 / dsm
Benzidine	ND	ug/L		10		SW8270C	09/05/19 20:00 / dsm
Benzo(a)anthracene	ND	ug/L		10		SW8270C	09/05/19 20:00 / dsm
Benzo(a)pyrene	ND	ug/L		10		SW8270C	09/05/19 20:00 / dsm
Benzo(b)fluoranthene	ND	ug/L		10		SW8270C	09/05/19 20:00 / dsm
Benzo(g,h,i)perylene	ND	ug/L		10		SW8270C	09/05/19 20:00 / dsm
Benzo(k)fluoranthene	ND	ug/L		10		SW8270C	09/05/19 20:00 / dsm
bis(-2-chloroethoxy)Methane	ND	ug/L		10		SW8270C	09/05/19 20:00 / dsm
bis(-2-chloroethyl)Ether	ND	ug/L		10		SW8270C	09/05/19 20:00 / dsm

Report RL - Analyte reporting limit.
Definitions: QCL - Quality control limit.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Environmental Consulting Services, LLC
Project: SMURFIT-EI
Lab ID: B19082921-008
Client Sample ID: SMW-20

Report Date: 09/30/19
Collection Date: 08/29/19 12:35
Date Received: 08/30/19
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
SEMI-VOLATILE ORGANIC COMPOUNDS							
bis(2-chloroisopropyl)Ether	ND	ug/L		10		SW8270C	09/05/19 20:00 / dsm
bis(2-ethylhexyl)Phthalate	ND	ug/L		10		SW8270C	09/05/19 20:00 / dsm
Butylbenzylphthalate	ND	ug/L		10		SW8270C	09/05/19 20:00 / dsm
Chrysene	ND	ug/L		10		SW8270C	09/05/19 20:00 / dsm
Di-n-butyl phthalate	ND	ug/L		10		SW8270C	09/05/19 20:00 / dsm
Di-n-octyl phthalate	ND	ug/L		10		SW8270C	09/05/19 20:00 / dsm
Dibenzo(a,h)anthracene	ND	ug/L		10		SW8270C	09/05/19 20:00 / dsm
Diethyl phthalate	ND	ug/L		10		SW8270C	09/05/19 20:00 / dsm
Dimethyl phthalate	ND	ug/L		10		SW8270C	09/05/19 20:00 / dsm
Fluoranthene	ND	ug/L		10		SW8270C	09/05/19 20:00 / dsm
Fluorene	ND	ug/L		10		SW8270C	09/05/19 20:00 / dsm
Hexachlorobenzene	ND	ug/L		10		SW8270C	09/05/19 20:00 / dsm
Hexachlorobutadiene	ND	ug/L		10		SW8270C	09/05/19 20:00 / dsm
Hexachlorocyclopentadiene	ND	ug/L		10		SW8270C	09/05/19 20:00 / dsm
Hexachloroethane	ND	ug/L		10		SW8270C	09/05/19 20:00 / dsm
Indeno(1,2,3-cd)pyrene	ND	ug/L		10		SW8270C	09/05/19 20:00 / dsm
Isophorone	ND	ug/L		10		SW8270C	09/05/19 20:00 / dsm
m+p-Cresols	ND	ug/L		10		SW8270C	09/05/19 20:00 / dsm
n-Nitroso-di-n-propylamine	ND	ug/L		10		SW8270C	09/05/19 20:00 / dsm
n-Nitrosodimethylamine	ND	ug/L		10		SW8270C	09/05/19 20:00 / dsm
n-Nitrosodiphenylamine	ND	ug/L		10		SW8270C	09/05/19 20:00 / dsm
Naphthalene	ND	ug/L		10		SW8270C	09/05/19 20:00 / dsm
Nitrobenzene	ND	ug/L		10		SW8270C	09/05/19 20:00 / dsm
o-Cresol	ND	ug/L		10		SW8270C	09/05/19 20:00 / dsm
Pentachlorophenol	ND	ug/L		50		SW8270C	09/05/19 20:00 / dsm
Phenanthrene	ND	ug/L		10		SW8270C	09/05/19 20:00 / dsm
Phenol	ND	ug/L		10		SW8270C	09/05/19 20:00 / dsm
Pyrene	ND	ug/L		10		SW8270C	09/05/19 20:00 / dsm
Pyridine	ND	ug/L		10		SW8270C	09/05/19 20:00 / dsm
Surr: 2,4,6-Tribromophenol	63.0	%REC		21-130		SW8270C	09/05/19 20:00 / dsm
Surr: 2-Fluorobiphenyl	56.0	%REC		28-107		SW8270C	09/05/19 20:00 / dsm
Surr: 2-Fluorophenol	32.0	%REC		20-56		SW8270C	09/05/19 20:00 / dsm
Surr: Nitrobenzene-d5	49.0	%REC		32-94		SW8270C	09/05/19 20:00 / dsm
Surr: Phenol-d5	26.0	%REC		19-45		SW8270C	09/05/19 20:00 / dsm
Surr: Terphenyl-d14	64.0	%REC		32-122		SW8270C	09/05/19 20:00 / dsm
POLYCHLORINATED BIPHENYLS (PCBS)							
Aroclor 1016	ND	ug/L		0.20		SW8082A	09/04/19 15:16 / jem
Aroclor 1221	ND	ug/L		0.20		SW8082A	09/04/19 15:16 / jem
Aroclor 1232	ND	ug/L		0.20		SW8082A	09/04/19 15:16 / jem
Aroclor 1242	ND	ug/L		0.20		SW8082A	09/04/19 15:16 / jem
Aroclor 1248	ND	ug/L		0.20		SW8082A	09/04/19 15:16 / jem
Aroclor 1254	ND	ug/L		0.20		SW8082A	09/04/19 15:16 / jem

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LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Environmental Consulting Services, LLC
Project: SMURFIT-EI
Lab ID: B19082921-008
Client Sample ID: SMW-20

Report Date: 09/30/19
Collection Date: 08/29/19 12:35
Date Received: 08/30/19
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
POLYCHLORINATED BIPHENYLS (PCBS)							
Aroclor 1260	ND	ug/L		0.20		SW8082A	09/04/19 15:16 / jem
Aroclor 1262	ND	ug/L		0.20		SW8082A	09/04/19 15:16 / jem
Aroclor 1268	ND	ug/L		0.20		SW8082A	09/04/19 15:16 / jem
Surr: Decachlorobiphenyl	99.0	%REC		44-130		SW8082A	09/04/19 15:16 / jem
Surr: Tetrachloro-m-xylene	82.0	%REC		40-110		SW8082A	09/04/19 15:16 / jem
- The sample extract received a Sulfuric Acid Clean-up (EPA Method 3665) and a Sulfur Clean-up (EPA Method 3660-copper) prior to analysis.							

Report Definitions: RL - Analyte reporting limit.
QCL - Quality control limit.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Environmental Consulting Services, LLC
Project: SMURFIT-EI
Lab ID: B19082921-009
Client Sample ID: RE-289

Report Date: 09/30/19
Collection Date: 08/29/19 13:25
Date Received: 08/30/19
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
INORGANICS							
Alkalinity, Total as CaCO ₃	149	mg/L		4		A2320 B	09/03/19 12:04 / zas
Bicarbonate as HCO ₃	182	mg/L		4		A2320 B	09/03/19 12:04 / zas
Carbonate as CO ₃	ND	mg/L		4		A2320 B	09/03/19 12:04 / zas
Chloride	6	mg/L		1		E300.0	08/31/19 01:45 / mrc
Sulfate	19	mg/L		1		E300.0	08/31/19 01:45 / mrc
NUTRIENTS							
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	08/30/19 15:12 / srh
Nitrogen, Nitrate+Nitrite as N	1.16	mg/L		0.01		E353.2	09/03/19 10:40 / srh
Nitrogen, Kjeldahl, Total as N	ND	mg/L		0.5		E351.2	09/03/19 14:48 / klw
Nitrogen, Total	1.2	mg/L		0.5		Calculation	09/04/19 13:43 / bas
Phosphorus, Total as P	0.041	mg/L		0.005		E365.1	09/03/19 14:13 / klw
METALS, DISSOLVED							
Mercury	ND	mg/L		0.0001		SW7470A	09/08/19 17:38 / jag
METALS, DISSOLVED							
Arsenic	ND	mg/L		0.001		SW6020	09/06/19 00:02 / car
Barium	0.21	mg/L		0.05		SW6010B	09/03/19 18:41 / rlh
Cadmium	ND	mg/L		0.001		SW6020	09/06/19 00:02 / car
Calcium	38	mg/L		1		SW6010B	09/03/19 18:41 / rlh
Chromium	ND	mg/L		0.005		SW6020	09/06/19 00:02 / car
Lead	ND	mg/L		0.001		SW6020	09/06/19 00:02 / car
Magnesium	14	mg/L		1		SW6010B	09/03/19 18:41 / rlh
Potassium	2	mg/L		1		SW6010B	09/03/19 18:41 / rlh
Selenium	ND	mg/L		0.001		SW6020	09/06/19 00:02 / car
Silver	ND	mg/L		0.001		SW6020	09/06/19 00:02 / car
Sodium	10	mg/L		1		SW6010B	09/03/19 18:41 / rlh
METALS, TOTAL							
Arsenic	ND	mg/L		0.001		SW6020	09/06/19 00:06 / car
Barium	0.26	mg/L		0.05		SW6020	09/06/19 00:06 / car
Cadmium	ND	mg/L		0.001		SW6020	09/06/19 00:06 / car
Chromium	ND	mg/L		0.005		SW6020	09/06/19 00:06 / car
Lead	ND	mg/L		0.001		SW6020	09/06/19 00:06 / car
Mercury	ND	mg/L		0.0001		SW7470A	09/05/19 16:50 / jag
Selenium	ND	mg/L		0.001		SW6020	09/06/19 00:06 / car
Silver	ND	mg/L		0.001		SW6020	09/06/19 00:06 / car
VOLATILE ORGANIC COMPOUNDS							
Benzene	ND	ug/L		1.0		SW8260B	09/04/19 17:33 / msc
Bromobenzene	ND	ug/L		1.0		SW8260B	09/04/19 17:33 / msc
Bromochloromethane	ND	ug/L		1.0		SW8260B	09/04/19 17:33 / msc
Bromodichloromethane	ND	ug/L		1.0		SW8260B	09/04/19 17:33 / msc

Report RL - Analyte reporting limit.
Definitions: QCL - Quality control limit.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Environmental Consulting Services, LLC
Project: SMURFIT-EI
Lab ID: B19082921-009
Client Sample ID: RE-289

Report Date: 09/30/19
Collection Date: 08/29/19 13:25
Date Received: 08/30/19
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Bromoform	ND	ug/L		1.0		SW8260B	09/04/19 17:33 / msc
Bromomethane	ND	ug/L		1.0		SW8260B	09/04/19 17:33 / msc
Carbon tetrachloride	ND	ug/L		1.0		SW8260B	09/04/19 17:33 / msc
Chlorobenzene	ND	ug/L		1.0		SW8260B	09/04/19 17:33 / msc
Chlorodibromomethane	ND	ug/L		1.0		SW8260B	09/04/19 17:33 / msc
Chloroethane	ND	ug/L		1.0		SW8260B	09/04/19 17:33 / msc
Chloroform	ND	ug/L		1.0		SW8260B	09/04/19 17:33 / msc
Chloromethane	ND	ug/L		1.0		SW8260B	09/04/19 17:33 / msc
1,2-Dibromoethane	ND	ug/L		1.0		SW8260B	09/04/19 17:33 / msc
2-Chlorotoluene	ND	ug/L		1.0		SW8260B	09/04/19 17:33 / msc
4-Chlorotoluene	ND	ug/L		1.0		SW8260B	09/04/19 17:33 / msc
Dibromomethane	ND	ug/L		1.0		SW8260B	09/04/19 17:33 / msc
1,2-Dichlorobenzene	ND	ug/L		1.0		SW8260B	09/04/19 17:33 / msc
1,3-Dichlorobenzene	ND	ug/L		1.0		SW8260B	09/04/19 17:33 / msc
1,4-Dichlorobenzene	ND	ug/L		1.0		SW8260B	09/04/19 17:33 / msc
Dichlorodifluoromethane	ND	ug/L		1.0		SW8260B	09/04/19 17:33 / msc
1,1-Dichloroethane	ND	ug/L		1.0		SW8260B	09/04/19 17:33 / msc
1,2-Dichloroethane	ND	ug/L		1.0		SW8260B	09/04/19 17:33 / msc
1,1-Dichloroethene	ND	ug/L		1.0		SW8260B	09/04/19 17:33 / msc
cis-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	09/04/19 17:33 / msc
trans-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	09/04/19 17:33 / msc
1,2-Dichloropropane	ND	ug/L		1.0		SW8260B	09/04/19 17:33 / msc
1,3-Dichloropropane	ND	ug/L		1.0		SW8260B	09/04/19 17:33 / msc
2,2-Dichloropropane	ND	ug/L		1.0		SW8260B	09/04/19 17:33 / msc
1,1-Dichloropropene	ND	ug/L		1.0		SW8260B	09/04/19 17:33 / msc
cis-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	09/04/19 17:33 / msc
trans-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	09/04/19 17:33 / msc
Ethylbenzene	ND	ug/L		1.0		SW8260B	09/04/19 17:33 / msc
Methyl ethyl ketone	ND	ug/L		20		SW8260B	09/04/19 17:33 / msc
Methyl tert-butyl ether (MTBE)	ND	ug/L		1.0		SW8260B	09/04/19 17:33 / msc
Methylene chloride	ND	ug/L		1.0		SW8260B	09/04/19 17:33 / msc
Styrene	ND	ug/L		1.0		SW8260B	09/04/19 17:33 / msc
1,1,1,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	09/04/19 17:33 / msc
1,1,2,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	09/04/19 17:33 / msc
Tetrachloroethene	ND	ug/L		1.0		SW8260B	09/04/19 17:33 / msc
Toluene	ND	ug/L		1.0		SW8260B	09/04/19 17:33 / msc
1,1,1-Trichloroethane	ND	ug/L		1.0		SW8260B	09/04/19 17:33 / msc
1,1,2-Trichloroethane	ND	ug/L		1.0		SW8260B	09/04/19 17:33 / msc
Trichloroethene	ND	ug/L		1.0		SW8260B	09/04/19 17:33 / msc
Trichlorofluoromethane	ND	ug/L		1.0		SW8260B	09/04/19 17:33 / msc
1,2,3-Trichloropropane	ND	ug/L		1.0		SW8260B	09/04/19 17:33 / msc
Vinyl chloride	ND	ug/L		1.0		SW8260B	09/04/19 17:33 / msc
m+p-Xylenes	ND	ug/L		1.0		SW8260B	09/04/19 17:33 / msc

Report RL - Analyte reporting limit.
Definitions: QCL - Quality control limit.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Environmental Consulting Services, LLC
Project: SMURFIT-EI
Lab ID: B19082921-009
Client Sample ID: RE-289

Report Date: 09/30/19
Collection Date: 08/29/19 13:25
Date Received: 08/30/19
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
o-Xylene	ND	ug/L		1.0		SW8260B	09/04/19 17:33 / msc
Xylenes, Total	ND	ug/L		1.0		SW8260B	09/04/19 17:33 / msc
Surr: Dibromofluoromethane	100	%REC		77-126		SW8260B	09/04/19 17:33 / msc
Surr: 1,2-Dichloroethane-d4	105	%REC		70-130		SW8260B	09/04/19 17:33 / msc
Surr: Toluene-d8	101	%REC		79-122		SW8260B	09/04/19 17:33 / msc
Surr: p-Bromofluorobenzene	110	%REC		76-127		SW8260B	09/04/19 17:33 / msc
SEMI-VOLATILE ORGANIC COMPOUNDS							
1,2,4-Trichlorobenzene	ND	ug/L		10		SW8270C	09/05/19 20:34 / dsm
1,2-Dichlorobenzene	ND	ug/L		10		SW8270C	09/05/19 20:34 / dsm
1,3-Dichlorobenzene	ND	ug/L		10		SW8270C	09/05/19 20:34 / dsm
1,4-Dichlorobenzene	ND	ug/L		10		SW8270C	09/05/19 20:34 / dsm
1-Methylnaphthalene	ND	ug/L		10		SW8270C	09/05/19 20:34 / dsm
2,4,5-Trichlorophenol	ND	ug/L		10		SW8270C	09/05/19 20:34 / dsm
2,4,6-Trichlorophenol	ND	ug/L		10		SW8270C	09/05/19 20:34 / dsm
2,4-Dichlorophenol	ND	ug/L		10		SW8270C	09/05/19 20:34 / dsm
2,4-Dimethylphenol	ND	ug/L		10		SW8270C	09/05/19 20:34 / dsm
2,4-Dinitrophenol	ND	ug/L		50		SW8270C	09/05/19 20:34 / dsm
2,4-Dinitrotoluene	ND	ug/L		10		SW8270C	09/05/19 20:34 / dsm
2,6-Dinitrotoluene	ND	ug/L		10		SW8270C	09/05/19 20:34 / dsm
2-Chloronaphthalene	ND	ug/L		10		SW8270C	09/05/19 20:34 / dsm
2-Chlorophenol	ND	ug/L		10		SW8270C	09/05/19 20:34 / dsm
2-Methylnaphthalene	ND	ug/L		10		SW8270C	09/05/19 20:34 / dsm
2-Nitrophenol	ND	ug/L		10		SW8270C	09/05/19 20:34 / dsm
3,3'-Dichlorobenzidine	ND	ug/L		10		SW8270C	09/05/19 20:34 / dsm
4,6-Dinitro-2-methylphenol	ND	ug/L		50		SW8270C	09/05/19 20:34 / dsm
4-Bromophenyl phenyl ether	ND	ug/L		10		SW8270C	09/05/19 20:34 / dsm
4-Chloro-3-methylphenol	ND	ug/L		10		SW8270C	09/05/19 20:34 / dsm
4-Chlorophenol	ND	ug/L		10		SW8270C	09/05/19 20:34 / dsm
4-Chlorophenyl phenyl ether	ND	ug/L		10		SW8270C	09/05/19 20:34 / dsm
4-Nitrophenol	ND	ug/L		50		SW8270C	09/05/19 20:34 / dsm
Acenaphthene	ND	ug/L		10		SW8270C	09/05/19 20:34 / dsm
Acenaphthylene	ND	ug/L		10		SW8270C	09/05/19 20:34 / dsm
Anthracene	ND	ug/L		10		SW8270C	09/05/19 20:34 / dsm
Azobenzene	ND	ug/L		10		SW8270C	09/05/19 20:34 / dsm
Benzidine	ND	ug/L		10		SW8270C	09/05/19 20:34 / dsm
Benzo(a)anthracene	ND	ug/L		10		SW8270C	09/05/19 20:34 / dsm
Benzo(a)pyrene	ND	ug/L		10		SW8270C	09/05/19 20:34 / dsm
Benzo(b)fluoranthene	ND	ug/L		10		SW8270C	09/05/19 20:34 / dsm
Benzo(g,h,i)perylene	ND	ug/L		10		SW8270C	09/05/19 20:34 / dsm
Benzo(k)fluoranthene	ND	ug/L		10		SW8270C	09/05/19 20:34 / dsm
bis(-2-chloroethoxy)Methane	ND	ug/L		10		SW8270C	09/05/19 20:34 / dsm
bis(-2-chloroethyl)Ether	ND	ug/L		10		SW8270C	09/05/19 20:34 / dsm

Report RL - Analyte reporting limit.
Definitions: QCL - Quality control limit.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Environmental Consulting Services, LLC
Project: SMURFIT-EI
Lab ID: B19082921-009
Client Sample ID: RE-289

Report Date: 09/30/19
Collection Date: 08/29/19 13:25
Date Received: 08/30/19
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
SEMI-VOLATILE ORGANIC COMPOUNDS							
bis(2-chloroisopropyl)Ether	ND	ug/L		10		SW8270C	09/05/19 20:34 / dsm
bis(2-ethylhexyl)Phthalate	ND	ug/L		10		SW8270C	09/05/19 20:34 / dsm
Butylbenzylphthalate	ND	ug/L		10		SW8270C	09/05/19 20:34 / dsm
Chrysene	ND	ug/L		10		SW8270C	09/05/19 20:34 / dsm
Di-n-butyl phthalate	ND	ug/L		10		SW8270C	09/05/19 20:34 / dsm
Di-n-octyl phthalate	ND	ug/L		10		SW8270C	09/05/19 20:34 / dsm
Dibenzo(a,h)anthracene	ND	ug/L		10		SW8270C	09/05/19 20:34 / dsm
Diethyl phthalate	ND	ug/L		10		SW8270C	09/05/19 20:34 / dsm
Dimethyl phthalate	ND	ug/L		10		SW8270C	09/05/19 20:34 / dsm
Fluoranthene	ND	ug/L		10		SW8270C	09/05/19 20:34 / dsm
Fluorene	ND	ug/L		10		SW8270C	09/05/19 20:34 / dsm
Hexachlorobenzene	ND	ug/L		10		SW8270C	09/05/19 20:34 / dsm
Hexachlorobutadiene	ND	ug/L		10		SW8270C	09/05/19 20:34 / dsm
Hexachlorocyclopentadiene	ND	ug/L		10		SW8270C	09/05/19 20:34 / dsm
Hexachloroethane	ND	ug/L		10		SW8270C	09/05/19 20:34 / dsm
Indeno(1,2,3-cd)pyrene	ND	ug/L		10		SW8270C	09/05/19 20:34 / dsm
Isophorone	ND	ug/L		10		SW8270C	09/05/19 20:34 / dsm
m+p-Cresols	ND	ug/L		10		SW8270C	09/05/19 20:34 / dsm
n-Nitroso-di-n-propylamine	ND	ug/L		10		SW8270C	09/05/19 20:34 / dsm
n-Nitrosodimethylamine	ND	ug/L		10		SW8270C	09/05/19 20:34 / dsm
n-Nitrosodiphenylamine	ND	ug/L		10		SW8270C	09/05/19 20:34 / dsm
Naphthalene	ND	ug/L		10		SW8270C	09/05/19 20:34 / dsm
Nitrobenzene	ND	ug/L		10		SW8270C	09/05/19 20:34 / dsm
o-Cresol	ND	ug/L		10		SW8270C	09/05/19 20:34 / dsm
Pentachlorophenol	ND	ug/L		50		SW8270C	09/05/19 20:34 / dsm
Phenanthrene	ND	ug/L		10		SW8270C	09/05/19 20:34 / dsm
Phenol	ND	ug/L		10		SW8270C	09/05/19 20:34 / dsm
Pyrene	ND	ug/L		10		SW8270C	09/05/19 20:34 / dsm
Pyridine	ND	ug/L		10		SW8270C	09/05/19 20:34 / dsm
Surr: 2,4,6-Tribromophenol	65.0	%REC		21-130		SW8270C	09/05/19 20:34 / dsm
Surr: 2-Fluorobiphenyl	63.0	%REC		28-107		SW8270C	09/05/19 20:34 / dsm
Surr: 2-Fluorophenol	30.0	%REC		20-56		SW8270C	09/05/19 20:34 / dsm
Surr: Nitrobenzene-d5	54.0	%REC		32-94		SW8270C	09/05/19 20:34 / dsm
Surr: Phenol-d5	22.0	%REC		19-45		SW8270C	09/05/19 20:34 / dsm
Surr: Terphenyl-d14	83.0	%REC		32-122		SW8270C	09/05/19 20:34 / dsm
POLYCHLORINATED BIPHENYLS (PCBS)							
Aroclor 1016	ND	ug/L		0.20		SW8082A	09/04/19 16:40 / jem
Aroclor 1221	ND	ug/L		0.20		SW8082A	09/04/19 16:40 / jem
Aroclor 1232	ND	ug/L		0.20		SW8082A	09/04/19 16:40 / jem
Aroclor 1242	ND	ug/L		0.20		SW8082A	09/04/19 16:40 / jem
Aroclor 1248	ND	ug/L		0.20		SW8082A	09/04/19 16:40 / jem
Aroclor 1254	ND	ug/L		0.20		SW8082A	09/04/19 16:40 / jem

Report RL - Analyte reporting limit.
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LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Environmental Consulting Services, LLC
Project: SMURFIT-EI
Lab ID: B19082921-009
Client Sample ID: RE-289

Report Date: 09/30/19
Collection Date: 08/29/19 13:25
Date Received: 08/30/19
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
POLYCHLORINATED BIPHENYLS (PCBS)							
Aroclor 1260	ND	ug/L		0.20		SW8082A	09/04/19 16:40 / jem
Aroclor 1262	ND	ug/L		0.20		SW8082A	09/04/19 16:40 / jem
Aroclor 1268	ND	ug/L		0.20		SW8082A	09/04/19 16:40 / jem
Surr: Decachlorobiphenyl	71.0	%REC		44-130		SW8082A	09/04/19 16:40 / jem
Surr: Tetrachloro-m-xylene	77.0	%REC		40-110		SW8082A	09/04/19 16:40 / jem
- The sample extract received a Sulfuric Acid Clean-up (EPA Method 3665) and a Sulfur Clean-up (EPA Method 3660-copper) prior to analysis.							

Report Definitions: RL - Analyte reporting limit.
QCL - Quality control limit.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.



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Clark Fort Pit - PA Prospects

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Todd Kietz

to ESmith@mt.gov, katie.garcin-forba@mt.gov, me, Bradywiggs@gmail.com, Travis, Matt

Hello Elizabeth – Regarding the proposed Clark Fork Pit from PA Prospects, Charlie forwarded the attached document dated 12/31/201 regarding floodplain requirements. Thank you for taking floodplain requirements into consideration.

As identified on our flood tool: <https://gis.missoulacounty.us/CAPS/Floodplain/> the vast majority of the *bonded* area is outside of the re the bonded area that are within the floodplain. **A floodplain permit will not be required at this time.** Please reference the following flood

1. Prior to mining activities, the designated floodplain within the bonded area shall be fenced off as approved by the local floodpl
2. A floodplain permit will be required prior to authorization of mining activities within the unbonded area.

Please feel free to contact me by email for additional information and thanks again – stay healthy!

In response to the COVID-19 outbreak, the CAPS office is closed to the public until further notice. Please see our website ([www](#)

Todd S. Kietz, RS, CFM
Missoula County Floodplain Administrator
Community and Planning Services (CAPS)
200 W. Broadway
Missoula, MT 59801

(406)258-4841

Physical Address:
127 E. Main, Missoula, MT

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RCVD 05/22/2020

RCVD 05/22/2020



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8, MONTANA OFFICE**

FEDERAL BUILDING, 10 West 15TH Street, Suite 3200

Helena, MT 59626-0096

Phone 866-457-2690

www.epa.gov/region8

Ref: 8SEM-RBC

Mr. Charlie Johnston
PA Prospect Corporation
P.O. Box 785
Columbus, Montana 59019
Sent by email only
cjohnstonengineering@gmail.com

RE: Request for comfort/status letter, Section 24 and 25, T14NR21W, Montana Cadastral
Geocode 04-2324-25-2-01-05-0000, Smurfit-Stone Mill Frenchtown, Missoula MT

Dear Mr. Johnston,

Thank you for contacting the U.S. Environmental Protection Agency (EPA) about the plans of PA Prospect Corporation (PA Prospect) concerning the property referenced above (Property). PA Prospect intends to operate an open-cut mine at the Property and you requested that we provide you with a Superfund comfort/status letter.

On March 11, 2020, EPA held a conference call with you to discuss the proposed Clark Fork Open-cut Pit. By email dated March 25, 2020, you requested a comfort/status letter. Under the federal Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA, commonly referred to as Superfund),¹ the Agency's mission is to protect human health and the environment from the actual or potential risks posed by exposure to contaminated or potentially contaminated land and other media. A Superfund cleanup can help return lands to productive reuse. We are providing this letter consistent with the Agency's 2019 Comfort/Status letter policy.² The purpose of this comfort/status letter includes providing you with information that may be relevant to the potential CERCLA liability concerns you have identified at the impacted Property and summarizing the relevant information available to the EPA about the Site as of the date of this letter. We hope this information will enable you to make informed decisions regarding the Property's cleanup status and CERCLA's liability protections as you move forward with making a decision about the Property.

Property Status

Information on sites that are, or potentially are, contaminated with hazardous substances and may warrant action under Superfund, including site-specific documents and fact sheets, is recorded in the EPA's Superfund Enterprise Management System (SEMS), which may be accessed at <https://cumulis.epa.gov/supercpad/cursites/srchsites.cfm>. SEMS includes a public access database that contains information about sites where there has been EPA regional office involvement under

¹ 42 U.S.C. §§ 9601, *et seq.*

² See *2019 Policy on the Issuance of Superfund Comfort/Status Letters*.

Superfund. Additional information can be found online at EPA's Smurfit-Stone Mill Frenchtown website, the Frenchtown Rural Fire District Hall located at 16875 Marion Street, Frenchtown, MT, or the EPA Superfund Records Center, Montana Office, located at 10 West 15th Street, Suite 3200, Helena, MT.

The Property is situated within the Smurfit-Stone Mill Frenchtown (Site). This Site is located in SEMS and has been proposed to the National Priorities List (NPL). For the reasons stated below, the EPA is investigating the Site under Superfund authority.

History and Status of the Site

As mentioned above, SEMS provides information for NPL sites (i.e., sites proposed to the NPL, currently on the final NPL, or deleted from the final NPL), sites subject to a federal removal action, and sites with a Superfund Alternative Approach agreement. The profile includes information such as the status of cleanup efforts and cleanup milestones that have been reached. For more information about the Site, please visit SEMS at <https://cumulis.epa.gov/supercpad/cursites/srchsites.cfm>.

The Site is currently in the remedial investigation phase of the Superfund remedial process. EPA project teams are in the process of understanding contamination migration within and beyond the Site and understanding risks. Please follow the link for a comprehensive review of the most recent EPA actions at the Site: EPA Region 8 Community Update Winter 2020, Smurfit-Stone Mill Site

Reuse of the Property

Based on the information you provided, EPA understands that PA Prospect intends to operate a gravel pit at the Property. The Open-cut Mining Permit application, a copy of which is enclosed, provides that PA Prospect would cease mining at or above the high water table and use on-site materials to backfill to ensure that a minimum of 3 feet of material is maintained above the seasonal high water table for final reclamation. No water feature would remain for final reclamation.

Please note that, to ensure the remedy remains protective of human health and the environment, any development must be compatible with the EPA cleanup actions and institutional controls (ICs) designed to protect the remedy and prevent unacceptable exposure to residual contamination. PA Prospect should not conduct any activities or construct any structures that would interfere with the EPA's investigation or cleanup or be inconsistent with the underlying land use assumptions used to design and implement the cleanup.

As of the date of this letter, we have not identified any obvious incompatibility between the proposed use of the Property as you have described it to us and EPA's ongoing investigation

As your plans develop further, please continue to discuss the development with us. The EPA recommends that you consult with your own legal counsel and environmental professional to ensure that your proposed reuse will not affect EPA's cleanup response.

CERCLA's Bona Fide Prospective Purchaser Liability Protection

The EPA understands that you may be interested in information regarding the bona fide prospective

purchaser (BFPP) provisions of CERCLA. Congress amended CERCLA in 2002 to exempt certain parties who buy contaminated or potentially contaminated properties from CERCLA liability if they qualify as BFPPs. The BFPP provision provides that a person meeting the criteria of CERCLA §§ 101(4) and 107(r)(1), and who purchases the property after January 11, 2002, will not be liable as an owner or operator under CERCLA. The statutory definition of a BFPP also includes a party who acquires a leasehold interest in a property after January 11, 2002, where the leasehold is not designed to avoid liability and the interested party meets certain conditions and criteria.

The Agency has issued guidance discussing some of the BFPP criteria. See *Enforcement Discretion Guidance Regarding Statutory Criteria for Those Who May Qualify as CERCLA Bona Fide Prospective Purchasers, Contiguous Property Owners, or Innocent Landowners* (“Common Elements”) (“Common Elements Guidance”) (July 29, 2019, available at <https://www.epa.gov/enforcement/common-elements-guidance>). Note that a court, rather than the EPA, ultimately determines whether a landowner has met the criteria for BFPP status. Thus, the EPA recommends that you consult your legal counsel to assess whether you satisfy each of the statutory requirements necessary to achieve and maintain BFPP status.

Among other criteria outlined in CERCLA, a BFPP must take “reasonable steps” to stop continuing releases, prevent threatened future releases, and prevent or limit human, environmental, or natural resources exposure to any previously released hazardous substances as required by CERCLA § 101(40)(B)(iv). This requirement is explored further in the Common Elements Guidance.

REASONABLE STEPS

You have asked what actions by PA Prospect may constitute reasonable steps. As noted above, the Agency is currently investigating the Site and has identified several environmental concerns. Based on the information we have evaluated to date, we believe that the following may be reasonable steps related to the hazardous substance contamination found at the Site:

1. Obtain and comply with all necessary permits.
2. Ensure any mining operation does not come into contact with groundwater at the Property.
3. Refrain from accessing groundwater in any capacity at the Property.
4. Provide EPA and any authorized parties conducting work under an EPA order, including but not limited to the State of Montana, with access to the Property.

Any reasonable steps suggested by the EPA are based on the nature and extent of contamination currently known to the Agency and are provided as a guide to help you as you seek to reuse the Property. Because a final determination about which steps are reasonable would be made by a court rather than the EPA, and because additional reasonable steps may later be necessary based on site conditions, this list of reasonable steps is not exhaustive. You should continue to identify reasonable steps based on your observation and judgment and take appropriate action to implement any reasonable step whether or not the EPA regional staff have identified any such steps.³ We recommend that you

³ CERCLA § 101(40)(B)(iv) provides that “The person exercises appropriate care with respect to hazardous substances found at the facility by taking reasonable steps to (i) stop any continuing release; (ii) prevent any threatened future releases; and (iii) prevent or limit human, environmental, or natural resource exposure to any previously released hazardous substance.”

consult with your environmental professional and legal counsel to ensure that you take the reasonable steps necessary with respect to any hazardous substance contamination.

Superfund Lien Pursuant to CERCLA § 107(l)

A Superfund lien has arisen on the Site pursuant to Section 107(l) of CERCLA. The EPA has filed a notice of its Superfund lien on this Site pursuant to CERCLA § 107(l) and is not willing to seek a negotiated resolution leading to release of the lien at this time.

State Actions

We can only provide you with information about federal Superfund actions at the Site, federal law and regulations, and EPA guidance. For information about potential state actions and liability issues, please contact Katie Gacin-Forba with Montana Department of Environmental Quality's (DEQ) Open-cut Mining Section at (406) 444-4976 and Keith Large with DEQ's Federal Superfund Section (406) 444-6569.

Conclusion

The EPA remains dedicated to facilitating the cleanup and reuse of contaminated properties and hopes the information contained in this letter is useful to you. Please note that the letter does not offer conclusive statements about Site conditions or liability. You may find it helpful to consult your own environmental professional, legal counsel, and your state, tribal, or local environmental protection agency before taking any action to acquire, clean up, or redevelop the impacted Property. These consultations may help you obtain a greater level of comfort about the compatibility of the proposed use and ensure compliance with any applicable federal, state, local, and/or tribal laws or requirements. If you have any additional questions or wish to discuss this information further, please feel free to contact Allie Archer at (406) 457-5033 or archer.allie@epa.gov.

Sincerely,



Allie Archer
Superfund Remedial Project Manager
U.S. Environmental Protection Agency, Region 8

Enclosure

cc: Joe Vranka, EPA
Andrea Madigan, EPA
Maureen O'Reilly, EPA
Amelia Piggott, EPA
Tom Stoops, DEQ
Jon Morgan, DEQ
Keith Large, DEQ
Katie Garcin-Forba, DEQ

CLARK FORK PIT

SPILL PREVENTION & MITIGATION PLAN

- ◆ At the Clark Fork Site, all hazardous fuels will be stored in their double-walled insulated tanks. Hazardous fuels will be separated or need to be bermed
- ◆ Site Superintendent will check conformance of all equipment, and will take immediate action if any leaks should arise.
- ◆ Correct material handling procedures will be followed by PA Prospect Corp. PA Prospect Corp. will notify CO of any hazardous spills.
- ◆ Fuels, Oils, Grease, Lubricants will be brought to the job site in approved double walled insulated service trucks. Any hazardous material that may need to be stored on the job site will be stored atleast 200 feet from the nearest water source
- ◆ Absorbent materials will be kept on the job site for any unforeseen leaks
- ◆ Material Safety and Data Sheets (MSDS) available.

SYNOPSIS

- In the event of a spill, the Site Superintendent will asses the situation at hand and decide whether emergency action is needed or not. In the event of an emergency, the CO will be contacted as well as the local authorities. For minor spills, the Quality Control Manager and the Site Superintendent will document and take appropriate actions to remedy the issue.

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Summary

Primary Information

Property Category: RP

Geocode: 04-2324-25-2-01-15-0000

Primary Owner:
PA PROSPECT CORPORATION
PO BOX 785
COLUMBUS, MT 59019-0785

NOTE: See the Owner tab for all owner information

Certificate of Survey: 1467

Subdivision:

Legal Description:
S25, T14 N, R21 W, ACRES 238.91, NW 4 & COS 1467 TRACT A

Last Modified: 7/14/2020 6:48:05 PM

Subcategory: Agricultural and Timber Properties

Assessment Code: 0420038001

Property Address:

COS Parcel: A

General Property Information

Neighborhood: 204.027

Living Units: 0

Zoning:

Linked Property:

Property Type: VAC_R - Vacant Land - Rural

Levy District: 04-1598-40-3

Ownership %: 100

No linked properties exist for this property

Exemptions:

No exemptions exist for this property

Condo Ownership:

General: 0

Limited: 0

Property Factors

Topography:

Utilities:

Access:

Location:

Fronting:

Parking Type:

Parking Quantity:

Parking Proximity:

Land Summary

<u>Land Type</u>	<u>Acres</u>	<u>Value</u>
Grazing	133.275	5,777.00
Forest	105.625	21,766.00

Owners

Appraisals

Market Land Info

Dwellings

Other Buildings/Improvements

Commercial

Ag/Forest Land